Accessory Staff or Walking Aid?
An Attempt to Unravel the Artefact’s Function by Investigating its Owner’s Skeletal Remains
Based on the textual sources, one could say that the ancient Egyptian concept of death was rather equivocal, ranging from threatening enemy to welcome homecoming.\(^1\) As the afterlife was imagined to differ little from the earthly existence, basic human needs, such as food and drink, as well as comfort needed to be satisfied.\(^2\) The former was guaranteed through the physical supply of food and drink in the grave, by means of a cult which ensured a regular replenishment of offerings, or by the provision of magical substitutes\(^3\) in the form of models and images. Burial equipment, on the other hand, consisting of objects of everyday use and personal items was to provide material comfort for the deceased in the afterlife. Alongside the artefacts of clearly identifiable function, such as pieces of furniture, garments and footwear, ceramic and stone vessels, tools and toiletries, objects of more puzzling functionality, such as wooden canes could also be found in the burial repository. As evident in the ancient Egyptian statuary and pictorial representations, sticks and staves of various, often function-specific, forms were broadly employed in Pharaonic Egypt,\(^4\) and in general, the objects symbolised power and denoted high social status or superior rank of the person in their possession (Figs 1–2). Although broadly employed in ancient Egypt, sticks and staves were exclusively associated with men, and findings of such objects in female burials are extremely rare.\(^5\) One of such burials dated to the Middle Kingdom was uncovered in the royal and élite cemetery at Lisht. The burial that belonged to the lady Senebtisi contained a number of funerary goods, including distinctively male objects, such as staves and sceptres, whips, maces and weapons.\(^6\) The presence of these typically male objects in a female’s burial was likely linked to the Osirian theory,\(^7\) according to which every person regardless of their sex would become Osiris after death. For that reason the objects that would normally be associated with men were also deposited in female burials.

Other than functioning as ceremonial or accessory objects, the sticks and staves could have had more practical use in providing support for the individuals with decreased mobility due to disabling conditions\(^8\) or senility, as depicted on the funerary stelae of Intef (Twelfth

\(^{1}\) J. ZANDEE, Death as an Enemy according to Ancient Egyptian Conceptions, New York 1977; J. ASSMANN, Death and Salvation in Ancient Egypt, London 2005.


\(^{3}\) Ibid., p. 222.


\(^{6}\) Ibid., pp. 14–15, 76–92.

\(^{7}\) Ibid., p. 78.

\(^{8}\) Z. HAWASS et al., Ancestry and pathology in King Tutankhamun’s family, JAMA 303/7, 2010, pp. 644–646. The most recent radiographic examination of the mummy of Tutankhamun has revealed that the king had walking impairment caused by malformations and pathological changes in his left foot. His walking disability was most likely aided by the use of sticks and staves, a great number of which bearing traces of wear were found in the king’s tomb by H. Carter (N. REEVES, The Complete Tutankhamun: The King, the Tomb, the Royal Treasure, London 1990).
1. Relief decoration of the east wall (south part) in the cult chapel of Nyankhnefertem (Chapel 15) at Saqqara-West; multiple representations of the tomb owner with a staff of office in his right hand (Phot. I. Kozieradzka-Ogunmakin).

2. Wooden statue of Akhethotep; the deceased is shown holding a staff of office in his left hand (Saqqara, Fifth Dynasty; Imhotep Museum, Saqqara, JE 9370) (Phot. I. Kozieradzka-Ogunmakin).

3. Funerary stela of Roma, a doorkeeper of the Eighteenth or Nineteenth Dynasty; Roma’s right leg is grossly wasted and shortened, and he is using his staff to rest on, so that his hands are free to perform offerings (Carsten Glyptotek Museum, Copenhagen, ÆIN 134) (Phot. I. Kozieradzka-Ogunmakin).
Dynasty) and Roma (Eighteenth or Nineteenth Dynasty) (Fig. 3), and illustrated by the hieroglyphic signs A19 and A20 (Figs 4–5) in Gardiner’s list. Both physical disability and advanced age were, however, rarely depicted in ancient Egyptian art that was governed, rather strictly, by a canon of proportions. This applied particularly to artistic representations of the royalty and élites, who regardless of their actual age and physique, were portrayed as ever young and able-bodied individuals. The commoners, on the other hand, were usually depicted realistically, with their physical imperfections, if observed by the artist. Not surprisingly, therefore, the use of the sticks and staves as walking aids in ancient Egypt has received very little scholarly attention, for it could barely be substantiated by statuary and pictorial representations. As walking aids would be a necessity for anybody with compromised mobility, either due to physical disability or senility, examination of human skeletal remains could provide much needed additional evidence, as demonstrated by D.E. Derry. Special attention should be particularly given to burials equipped with sticks or staves, as their placement in the deceased’s coffin or burial chamber could have been due to factors other than ritual.

Two such burials (B.540 and B.555) dated to the late Sixth Dynasty/early First Intermediate Period were uncovered in the so-called Lower Necropolis at Saqqara-West,
during archaeological works in 2007 and 2008. Both inhumations took place in small burial chambers of shaft-tombs, with each body deposited in a rectangular reed coffin. Visual examination of the skeletal remains recovered from the burials aimed to determine the individuals’ demographic attributes (sex and age at death) and physical health, with the application of standard anthropological methods described by Buikstra and Ubelaker. The biological data collected were further used to determine whether the individuals in question would require walking aids during their life. In this way, the persons’ physical health can assist in interpretation of the function of the wooden sticks that were found accompanying the bodies in their respective coffins.

Burial 540 took place in a small burial chamber (1.43m by 0.40m, and 0.75m in height) of Shaft 81 (2.37m in depth) in anonymous Tomb XXVIII. The burial chamber accommodated a rectangular reed coffin that contained the body of an elderly (50+ years of age) female resting on her right side in a fully flexed position, facing west. The skeletal remains with fragmentarily preserved linen wrappings were found intact and in anatomical position, although a missing lid of the coffin could potentially indicate that the burial was in fact disturbed. The coffin also contained a simple, undecorated wooden stick (S/07/18a) that was placed in front of the body (Fig. 6), as well as a single faience bead and a small fragment of unidentified copper object (S/07/18b), most likely the remains of jewellery that once adorned the deceased. The stick measured 98.7cm in length and 2.2cm in diameter, and was round in section. The artefact gently narrowed down towards one of its ends, and the slightly wider end of the stick was rounded.

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4. and 5. Hieroglyphic signs A19/A20 in Gardiner’s list used in the offering formulas in the cult chapel of Nyankhnefertem, Saqqara-West. The male figures are shown bent forward, resting on the forked sticks to illustrate old age (Phot. I. Kozieradzka-Ogunmakin).

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6. Burial 540 *in situ*: the coffin contains the body resting on the right side and a wooden stick placed in front of the deceased (Phot. J. Dąbrowski, PCMA Archive).

7. Burial 555 *in situ*, before (a) and after (b) the lifting of the coffin lid: the coffin contains the body resting on the left side and a wooden stick placed in front of the deceased (Phot. W. Wojciechowski, PCMA Archive).
Burial 555 was uncovered in a similarly small-size burial chamber (1.60m by 0.97m, and 0.84m in height) of Shaft 110 (3.79m in depth) in anonymous Tomb XXIX. The burial chamber contained an intact rectangular reed coffin with the remains of a young male, of approximately 18–20 years of age (Fig. 7). The deceased rested on his left side, facing east, with the arms extended along the body and the legs flexed only in the knees. The male’s completely skeletonised body was swathed in great amounts of linen, and a parcel of folded linen was also placed behind his legs. Moreover, the coffin contained an undecorated and slightly S-curved wooden stick (S/08/44) that was placed in front of the body.
The stick was slightly longer than that found in B.540 and measured 109.5cm. The artefact also gently narrowed down towards one of its ends, resulting in a minimal difference in diameter between the wider (1.75cm) and narrower (1.4cm) ends. Furthermore, the latter end was more rounded and polished than the former (Fig. 8), indicating the stick’s possible frequent use prior to its deposition in the deceased’s coffin.

The examination of the skeletal remains of the female from B.540 produced findings that would indicate the deceased most likely suffered from osteoporosis, a condition where the bones become thin and weak due to reduction of bone mass, and are therefore more susceptible to fracture.18 The majority of the fractures associated with osteoporosis are sustained by elderly individuals during accidental falls; hence, the spine, wrist and hips are particularly vulnerable and most commonly affected. In the case of the female from B.540, the deceased had indeed sustained a fracture to the right distal radius that would result from a fall onto an outstretched hand, the so-called Colles’ fracture (Fig. 9).19 The female also sustained a spiral fracture to the fifth metatarsal of the right foot (Fig. 10), most likely as a result of direct injury or twisting of the foot on landing from a fall from a height. Although the bone healed well, the lack of reduction of the bone fragments resulted in bone shortening by approximately 5mm due to overlap of the fragments. Furthermore, the female’s skull demonstrated extensive, approximately 30–40mm in diameter, bilateral depressions in the parietal bones (Fig. 11). This parietal bone thinning is often associated with post-menopausal and senile osteoporosis.20

Early degenerative changes were visible in the joints of the cervical and lumbar regions of the female’s spine (Fig. 12), as well as in the joints of the hands and the right wrist (most likely secondary to the sustained radial injury), and the knee joints. Degenerative changes in the right knee likely developed secondary to osteochondritis dissecans21 that occurred on the lateral condyle of the femur (Fig. 13). This type of lesion occurs when a fragment of bone or cartilage separates, partially or fully, from the end of the bone and either remains in place or becomes detached causing stiffness and instability of the joint. It usually occurs in the part of the joint that holds most of the body’s weight, and is therefore under constant stress that greatly hinders healing. According to I.S. Smillie’s study,22

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22 I.S. Smillie, Osteochondritis Dissecans. Loose Bodies in Joints; Etiology, Pathology, Treatment, Edinburgh-London 1960, passim.
osteocondritis dissecans in adults is caused mainly, if not exclusively, by endogenous and/or exogenous trauma.

Finally, the female’s sacrum demonstrated partial spina bifida occulta (Fig. 14), a congenital defect that normally affects the posterior aspect of one or several sacral segments, resulting in exposure of the spinal canal leaving the spinal cord protected only by

11. Depression in the left parietal due to bone thinning in the skull of the female from Burial 540 (Phot. I. Kozieradzka-Ogunmakin).

12. Degenerative changes (marginal lipping) on the superior margins of the third and fourth lumbar vertebral bodies in the female from Burial 540 (Phot. I. Kozieradzka-Ogunmakin).

cartilage or membrane. This mild skeletal abnormality would allow the affected individual to function satisfactorily and to attain advanced age, as attested by the female from B.540.

Contrary to the elderly female from B.540, the examination of the skeletal remains of the young male from B.555 demonstrated little evidence of pathology. Similarly to the elderly female, however, the male’s skull displayed bilateral parietal thinning (Fig. 15) that, considering the deceased’s young age, was likely developmental or dysplastic in nature, rather than secondary to osteoporosis. Although there was no direct skeletal evidence to support the concept that the deceased used the stick placed inside the coffin to aid walking, he most certainly experienced episodes of nutritional or physiological stress during childhood, as demonstrated by cribrotic lesions that formed in the orbital roofs and linear enamel hypoplasia defects in the teeth.

Evidence of pathological changes in the skeleton of the female in B.540, on the other hand, suggests that the deceased’s mobility was temporarily, if not permanently, compromised due to the possible stiffness and instability of the right knee joint caused by osteochondritis dissecans, injury sustained to the right foot, and development of degenerative changes.

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in the spine that were consistent with the female’s advanced age. Hence, it would seem highly probable that the female required some form of support to aid her walking during life.

The likelihood of this scenario is reliant on whether the sticks that were found inside the coffins were in fact suitable (lengthwise) to be used as walking aids. To be able to rest or lean on a stick or staff in a similar manner as demonstrated by Intef and Roma in their funerary stelae, the object would have to be of sufficient length and comparable to the person’s height. If, however, the person was to use the stick to support themselves in a way depicted in the hieroglyphic sign A19, the sufficient length of the stick would be approximately half of the person’s height. In order to compare the length of the individual sticks with the height of their respective owners, the deceased’s physical stature was estimated based on measurements of the long bones (humerus, radius, femur and tibia) and calculated using the regression formulae for ancient Egyptians established by M.H. Raxter et al.27

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The stature values obtained for the deceased were 154cm for the female and 185cm for the male. As the sticks measured 98.7cm and 109.5cm, respectively, the only way they could have been used to aid walking was by capping the top end of the stick with the hand or by placing the hand just below the top of it, as illustrated in the hieroglyphic sign A19. Contrary to the individuals concerned here, the man depicted in the hieroglyph demonstrates severe kyphotic curvature of the thoracic spine (hyperkyphosis), resulting in reduced stature. Nevertheless, the sticks in question were determined satisfactory lengthwise for use as walking aids, as tested on living persons with height comparable to the stature values estimated for the deceased.

Furthermore, it is noteworthy that in Old Kingdom-period art women are represented empty-handed, and only occasionally with a hieroglyphic sign representing a bolt of linen or a stalk of lotus in their fi sted hands, whereas it is customary for men to hold the baton of authority. This gender-based division of attributes was strictly followed, resulting in transformation of the man’s staff into a long-stemmed lotus in those cases where representations of men were replaced by figures of women (Fig. 16).

The placement of sticks in the deceased’s coffins, along with other personal objects customarily deposited in the tomb, was doubtless motivated by the belief in the continuation of life in the hereafter, with the intention of using the objects according to the persons’ individual requirements. Hence, the placement of the sticks in front of the deceased, as in B.540 and B.555, could have facilitated easy access to the objects when needed in the afterlife.

Taking into consideration the skeletal findings in human remains recovered from B.540 and B.555, the deceased’s age at death and sex, the simple form and length of the accompanying sticks, as well as the artefacts’ cultural and depositional contexts, the following could be concluded:

1. Since sticks and staves in the Old Kingdom were associated exclusively with men, as evident in the artistic representations, the finding of such an artefact in a female burial would likely suggest its function to have been other than symbolic. The artefact’s alternative use in the case of B.540 could be further substantiated by the evidence of trauma and pathological conditions observed in the female’s skeletal remains that would affect, at least to some extent, the deceased’s walking ability. The latter could have been aided with the use of a walking stick, a simple device that would provide support and decrease stress on the affected limb. The length of the stick recovered from the female’s coffin was most certainly sufficient to function as such a device.

28 Spinal hyperkyphosis occurs as a result of anterior collapse of vertebral bodies due to underlying condition.
31 Ibid., p. 160.
2°. The skeletal remains of a young male from B.555 provided no evidence of pathology to suggest that the deceased required the use of a walking stick at any time during his life. Considering the deceased’s young age at death and sex, as well as the lack of pathological evidence of walking impairment, it could be assumed that the stick recovered from the coffin was most likely a symbol of authority associated with the owner’s social status or official rank. This line of the artefact’s interpretation could be further supported by the fact that the burials in the Lower Necropolis at Saqqara-West belonged to high- and middle-rank officials that resided in the capital city of Memphis during the late Old Kingdom and early First Intermediate Period. The dignitaries of that time were traditionally represented carrying a straight mdw-staff while walking or standing, as evident in the pictorial representations that decorated funerary chapels of Merefnebef and Nyankhneferter at Saqqara-West.

Supported by iconographic and biological data, the two burials from Saqqara-West discussed in the present paper demonstrated that the sticks could vary in function when associated with individuals of different sex, age at death and physical health. The combination of various data sets could therefore assist in a better understanding of the artefacts recovered from burial contexts and the functions they were intended to perform during the person’s life and/or in the hereafter.*

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34 Myśliwiec, Kuraszkiewicz (Eds), Nyankhneferter, Pls XXXVI, LXIII, LXVII, LXIX–LXXII, LXXIV, LXXVI, LXXVIII, LXXX, LXXXII–LXXXIII, XCIII–XCV, CXIX.

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