

AL11

Week 4, Thursday



Scientific approaches to Skeletal Remains

A(nother) Golden Age of Discovery



HPAH5080/600

Ancient Lives in Death

Dr Katharina Zinn

Overview

- Framework in which they are studied
- Perspectives – points of view
 - Why we should not look inside
 - why we should
- (keep in mind the Mummification process)
- What the mummy can reveal
- Body – what they knew, what does it tell us?
- Iconography

- Case studies, DNA, facial reconstruction and racial debates – ethics, for another day.

Questions, inferences- do we need 'science', why not good old interpretation.

- What can we infer if the organism is articulated?



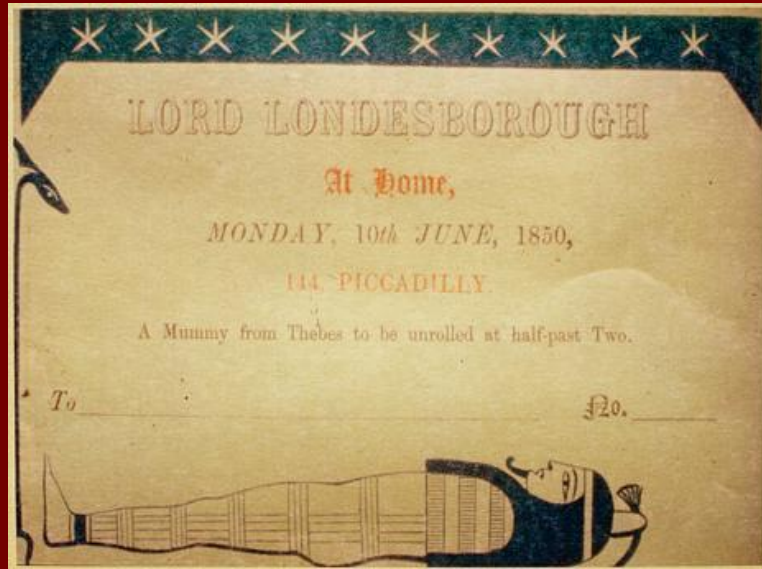
- What can we infer if it is disarticulated?



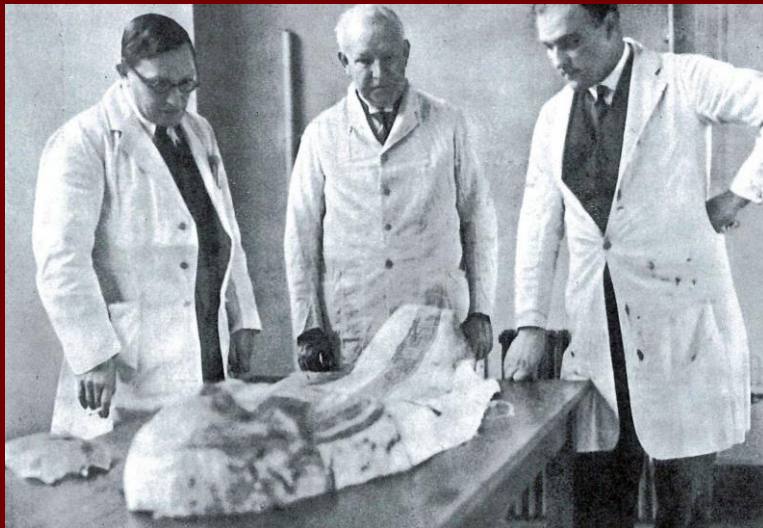
11/12th C Well Norfolk

Battle of Wisby

Egyptian Mummies and Modern Science Rosalie Davies' Manchester Museum Mummies Project



Cards, inviting to a mummy unwrapping and as a souvenir of one, come and have tea and see a mummy being unwrapped was fashionable...but it did confirm that the account by Herodotus was largely correct



Moshenska, G. 2014 Unrolling Egyptian mummies in nineteenth century Britain *B Jnl Hist Sci* 47(3)451-477

Murry and assistants with Khnum-Nakht in 1908: first scientific approach in the 'modern' era?



we would never do this to a mummy now., not in the name of 'science'

Points of View: science bioarchaeology

reconstructing or reading the body.

We hold the view that the body can **bear witness** to past actions. How they lived, and died, as in, their earthly life somehow left its mark on the body.



After all, the dead don't lie.....do they?

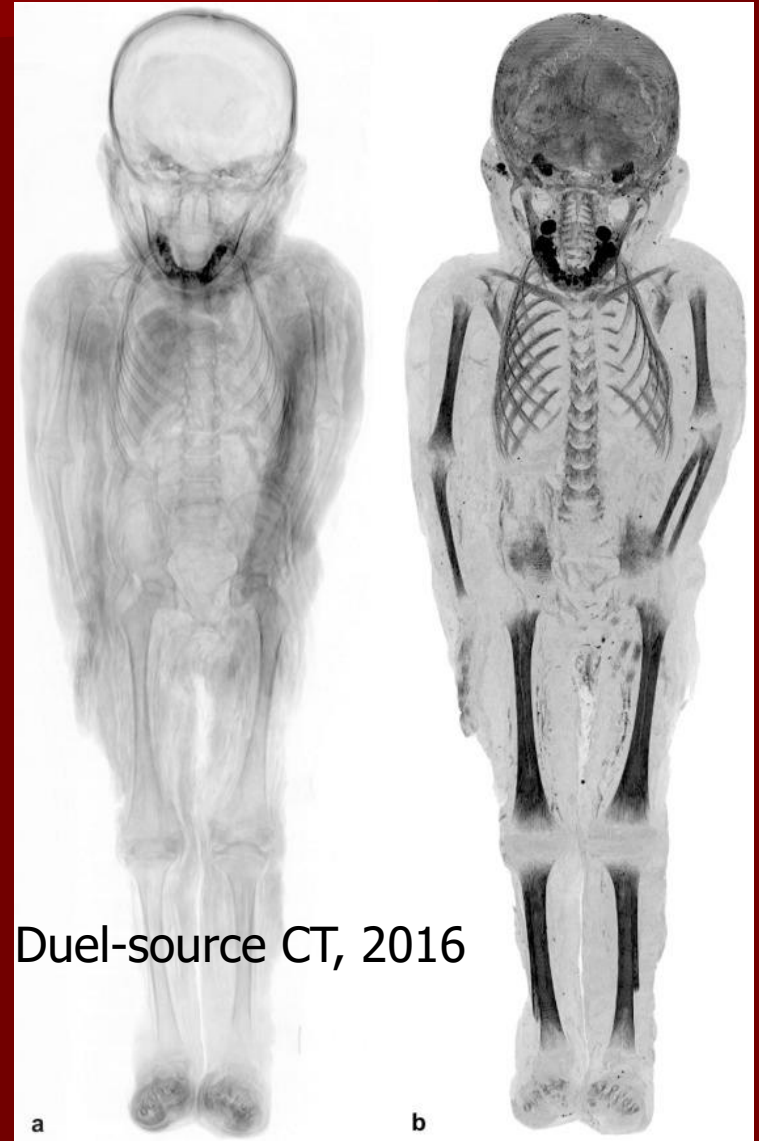
1. Biological Identity

2. individual Identity

The first known to be examined in 1896: the bandaged ancient Egyptian child mummy from the Senckenberg Museum of Natural History in Frankfurt a.M. (inventory number ÄS 18). Now re-examined using dual-source computed tomography see Zesch 2016 *European Journal of Radiology*



First ever mummy x-ray taken 1896



Dual-source CT, 2016

Mummification: ideal

- Idea of mummification = that in death not preserving or keeping a body as it was in life, but by careful and lengthy preparation, creating a new body for death, the eternal life (the afterlife).
WHAT did we learn from the practical though.....
- Preservation of the body, the cartonnage, the tomb, the grave goods were fundamental and essential for their conception of the afterlife - which could take place away from the tomb – drivers were
 - preservation of the body
 - mobility of the body

The important thing:

- They were private, personal, intimate (arrangements made with the funeral directors – the embalmers – depending on price - and not for public consumption)
- Idea – that they NOT be disturbed
- That they be 'preserved', kept in tact, **undisturbed** and **whole** including the furnishings



Book of the Dead, on papyrus showing hieratic writing of Hornefer, Ptolemaic Period, provenance unknown. Milan.

Points of View: ancient

- Spiritual – belief system – Ka and Ba
- Restricted – to elites....
- Divine – reforming into a divine image
 - once the body is cleansed of the earthly decomposition and meaning
 - Take on attributes of a god not a human (is no ‘individuality’ to reconstruct)
 - Allows movement between the world of the living and eternal sphere of the gods (i.e. is not a fixed thing)

Points of View: modern

- Appliance of Science
 - unwrapping, photography. X-ray, human osteology, CT scan, MSCT, MRI, D.N.A., endoscopy, facial reconstruction, try dual-energy CT with effective atomic number imaging!
- Invasive – intrusive i.e. disturbs even as a virtual autopsy...albeit with very laudable aims
- ‘Human’ (humanity) ... as in what makes us human
 - 1. society attributes, social values, etc. and 2. Demography
- The individual-ness (individual identity)
 - Attributes of individual, sex, gender, age,.....

Therefore is **inclusive** - if you survive to be looked at
Open, overt, = this **IS** the scientific method and, as such,
it is in the PUBLIC domain = point of science is overt, open etc.

British Museum 2014



The British
Museum

ancient lives new discoveries

eight mummies, eight stories



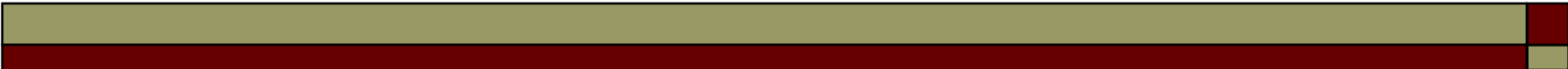
John H. Taylor and Daniel Antoine



'Bread and beer, and all
things good and pure'

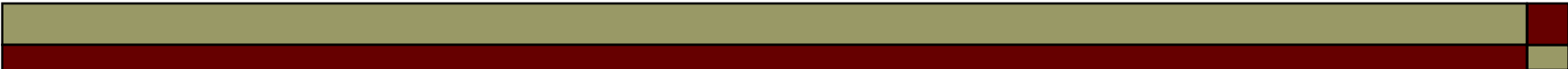
The ancient Egyptians believed that the body was made of earth and water, and that the soul was made of air and fire. They believed that the soul was made of air and fire, and that the body was made of earth and water. They believed that the soul was made of air and fire, and that the body was made of earth and water.





Review in Studio International

- ❑ *Ancient Lives, New Discoveries*, The British Museum, London, 22 May – 30 November 2014
- ❑ by EMILY SPICER
- ❑ Ancient Lives explores the mortal remains and daily routines of eight of the British Museum's mummies from ancient Egypt and Sudan. This is an exhibition rich in information and context, using cutting-edge technology, but it is also an exhibition that is bound to produce mixed feelings.



Ancient Lives brings us face to face with the past using state-of-the-art CT scanning and 3D imaging, a far cry from the mediums and séances of our Victorian forebears. The curators are keen to remind us that all human remains should be treated with respect – no longer is it the practice to pull mummies apart. Instead, each body is displayed intact, accompanied with interactive computer images that enable visitors to peel back the layers of wrappings electronically and to peer at and into the bodies beneath. Undoubtedly, this is preferable to physical dissection, but bodily boundaries are still crossed. We are afforded the option to investigate the bowels and the brains of deceased individuals who cannot protest at the scrutiny of thousands of curious eyes.

The appliance of modern science



- CT (Computer Tomography) Scan
- Mummy is an unusual one: a male from the Gracco-Roman period
- physical pursuit – conducted within a theoretical framework that is the scientific methodology
- Point is: it is an invasive



Tamut a *Shemayet* or 'Chantress' of Amun

- We can see little of what is inside
- The very act of opening disturbs
- Science now allows us 'open' and to see

Seeing what was not meant to be seen



This is Tamut a *Shemayet* or 'Chantress' of Amun:

She would have been one of many staff at the temple serving daily rituals and festivals – such women are of high status and of prosperous families.

BUT as a female she is seen as 'desirable'

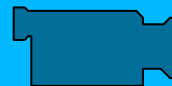
Females are under-represented, are less written about, less well documented

One could argue – science redresses the imbalance

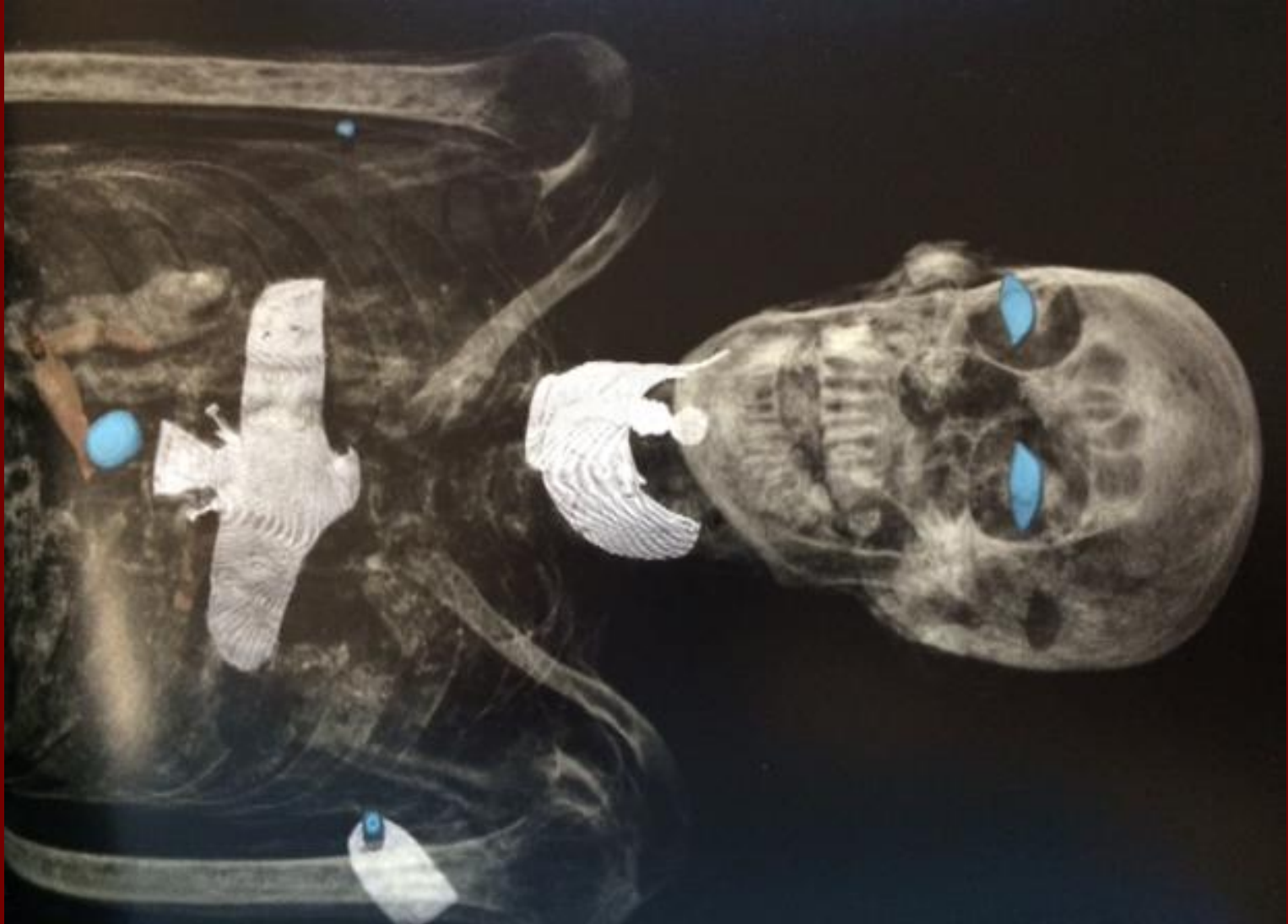
Tamut: Magic and mummification

- Tamut of Amun: such women are of high status and of prosperous families and could afford to buy into this type of burial.





Amulets - Andrews 1994 - are almost obligatory for the dead.... if you could afford them....



Restrictions

- Who it was performed on= not available to everyone – see Baines and Lacovara,
 - An elite ideal but in reality had to be compromised by the masses
 - Expensive – and took a long time to do properly, so the semblance of the act of embalming was performed – with the wrapped body – the finished result would look the same on the surface

We can see that accuracy was NOT essential – shortcuts, mistakes, etc. were literally covered over.

However, only we know this. They (the dead, their family) don't!

Reality is they knew a good deal about the body
– due to their embalming practices and the
mummification process.



How much of a scientific sense of their body did they have...beyond the treatment of the dead?

- Can look at their world view through medicine.
- Answer is – probably depends on what part of the body you are talking about.
- A rare but not unique prosthetic toe.
- Very limited sources of evidence – four or so major papyri are usually cited, e.g. Ebers Papyrus, Edwin Smith, Hearst etc.



- Healed fractures and amputations, seen with splints.

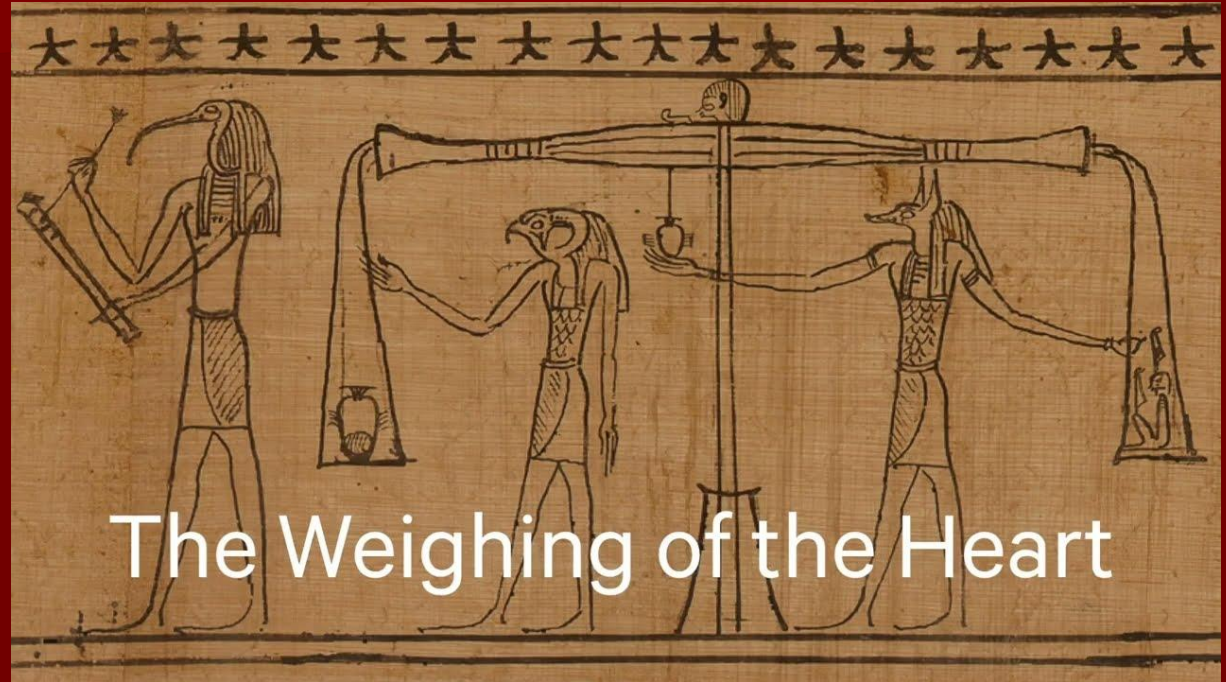
5th Dynasty Egypt
(2465-2323 BC)

The tombs of the
pyramid builders at
Giza

- Evident in
archaeology but
what about
iconography?



Heart of huge importance

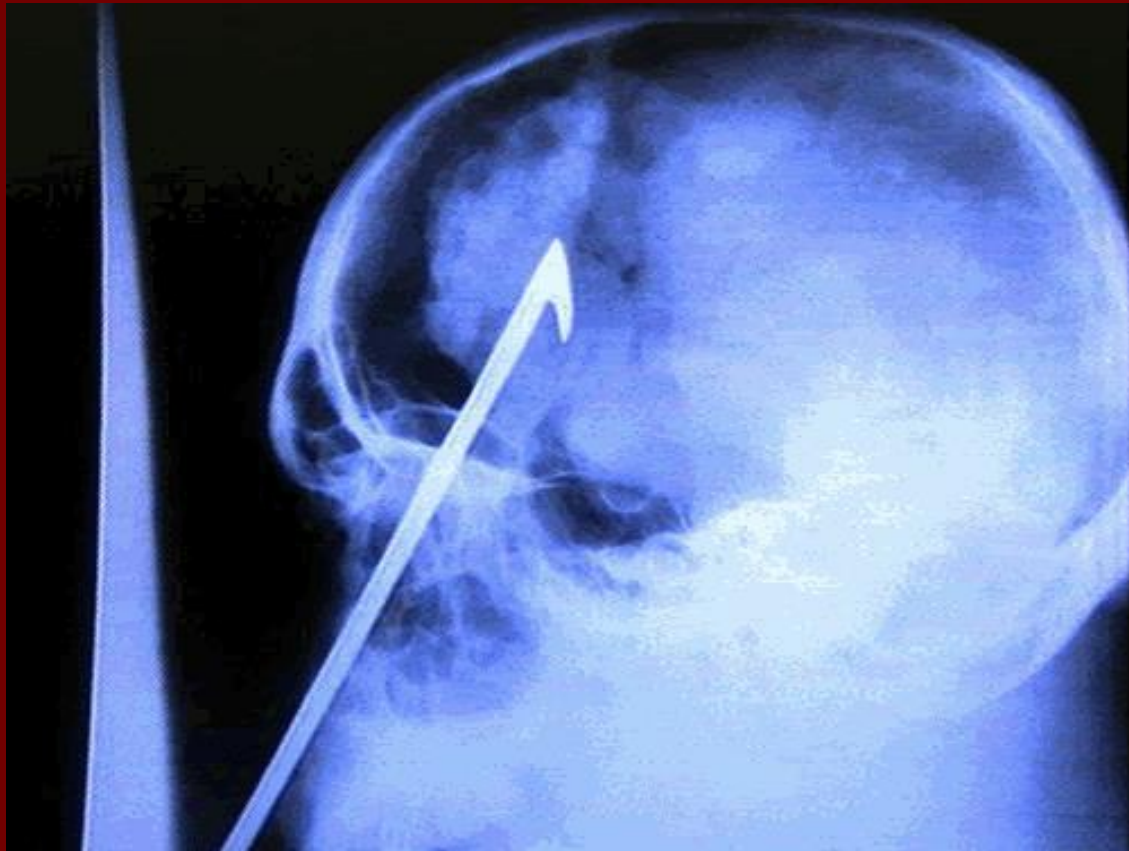


The Weighing of the Heart

To the right above – weighing of the heart scene - Thoth writes down the results – naughty or nice.

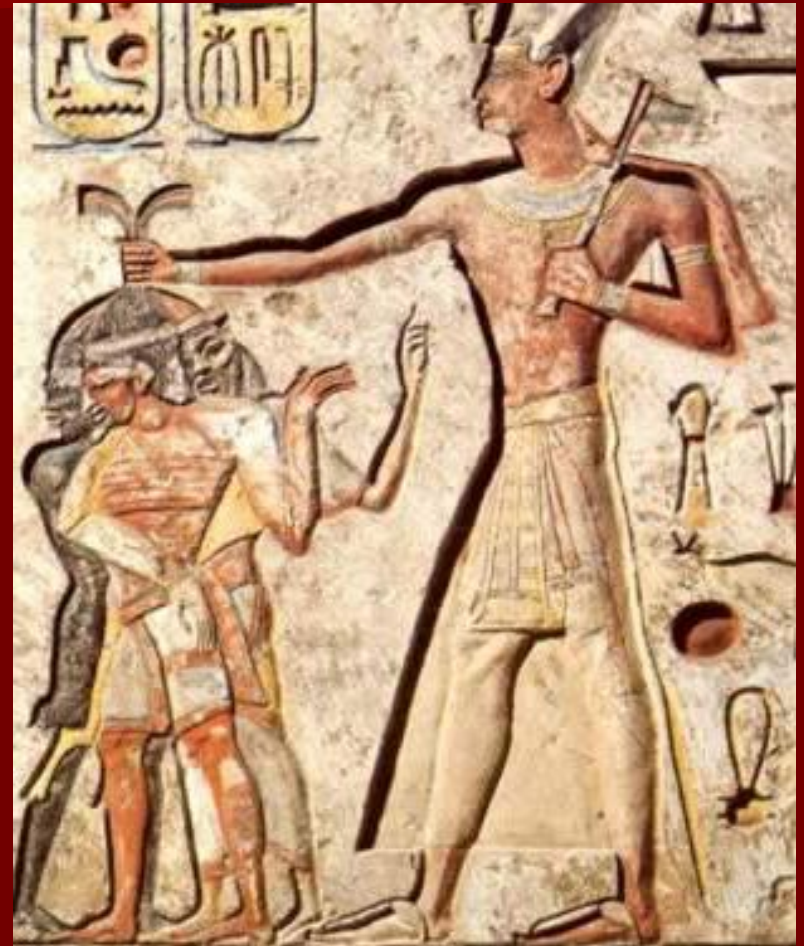
Above left: Heart amulet.....remarkably heart shaped.

Brain, less well represented,
probably not pulled out but mashed
up!



The ideal: Pharaoh as divine entity

- most depictions relate to the elites, particularly the king
- Man, Ruler, God
- As High Priest an intermediary between god and the people
- Chief responsibility to maintain Ma'at – universal harmony – relating to all aspects of society including religion, politics, war, etc.
- Given this – not surprising they are displayed as perfect.



The image of the reality

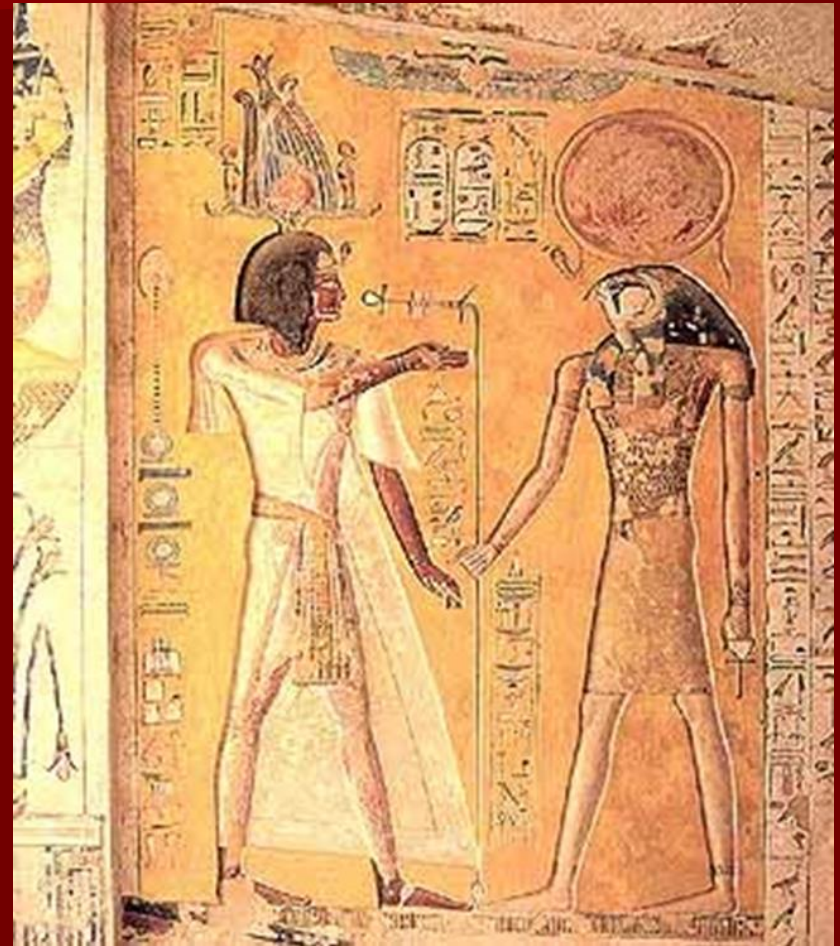


Pharaoh Siptah
19th Dynasty



Only Siptah talks to Ra

- Clear the image needed the boy-king to be near perfect – an equal in every way
 - same size as the god,
 - same visual impact,
 - mirroring the stance
 - balance between them,
 - the symmetry maintained
-
- Siptah: 19 Dynasty burial tomb in the Valley of the Kings



Tutankhamun walking stick a symbol of power over enemies

- His walking stick not only tells us he was finding it difficult to walk BUT also the detail showing representations of Asia and Nubia
- Keeping a tight grip on that lot
- Even in deformity he shows his power





What else can they tell us?

Ginger, Gebelein Man A and B

One of half a dozen or so 'natural' mummies from the pre-dynastic period probably 3700-3500 B.C. buried with flints, pots, bowls and beakers. Called 'Ginger' due to his surviving short curly hair.





Move towards dependency on wheat

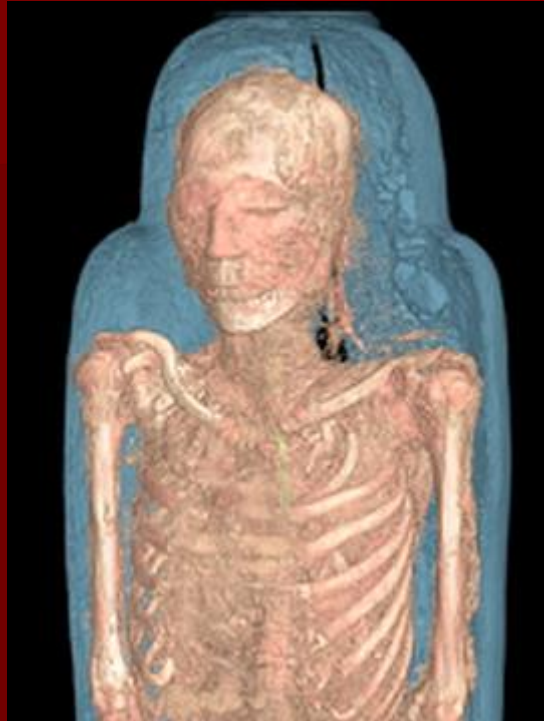
Even though he dies relatively young – some but very little dental disease can be seen

BUT note bone around the teeth is intact.

Gebelein Man

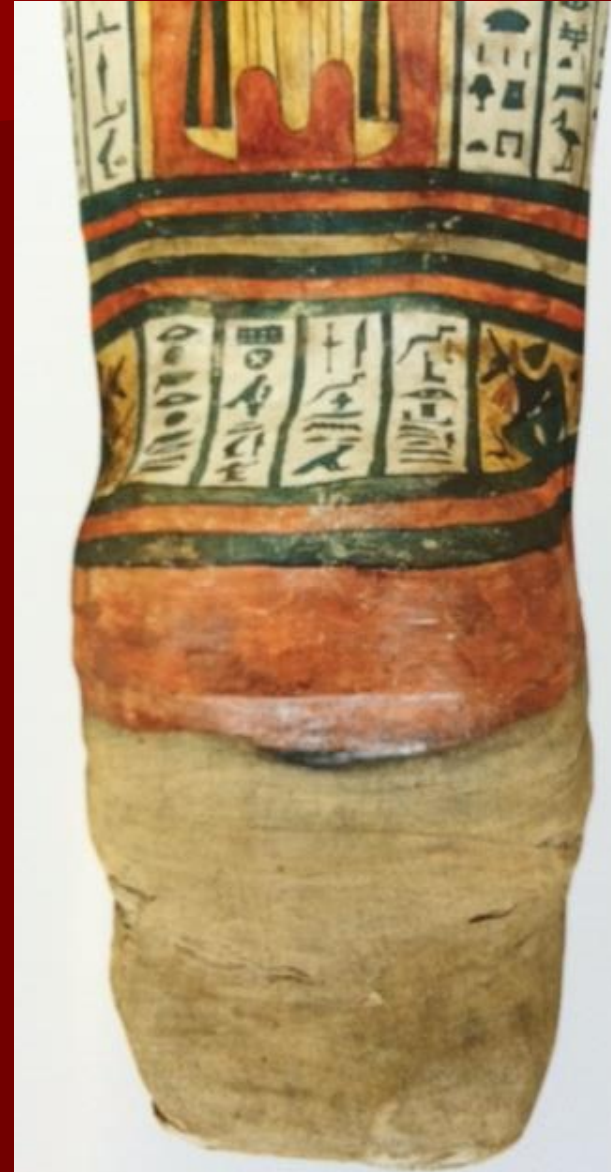


Padiamenet – foot extension



Gatekeeper to the
Temple
of Ra, and a barber.

Note: no amulets



CT images of Padiamenet

- Showing detail of the tools left in his body, presumable to support the head – something may well have gone wrong in the embalming process.
- Not his only problem....



...and his teeth!

Two areas of dental caries – holes both on the left and right

Advanced dental wear, tooth loss, all as a result of chronic infection,

May have resulted in exposing the dental pulp to bacteria – can lead to potentially fatal complications.

Also had cardio-vascular disease: rich fatty diet – unusual



'Preserving the physical integrity- of the body was one of the most important goals of ancient Egyptian mortuary practice, and it is clear from many of their writings damage to, or destruction of, the mummy would imperil the owner's chance of passing to eternal life.' (Taylor and Antoine 2014: 110).

Science shows us they would do anything to get them there looking perfect – from the outside.

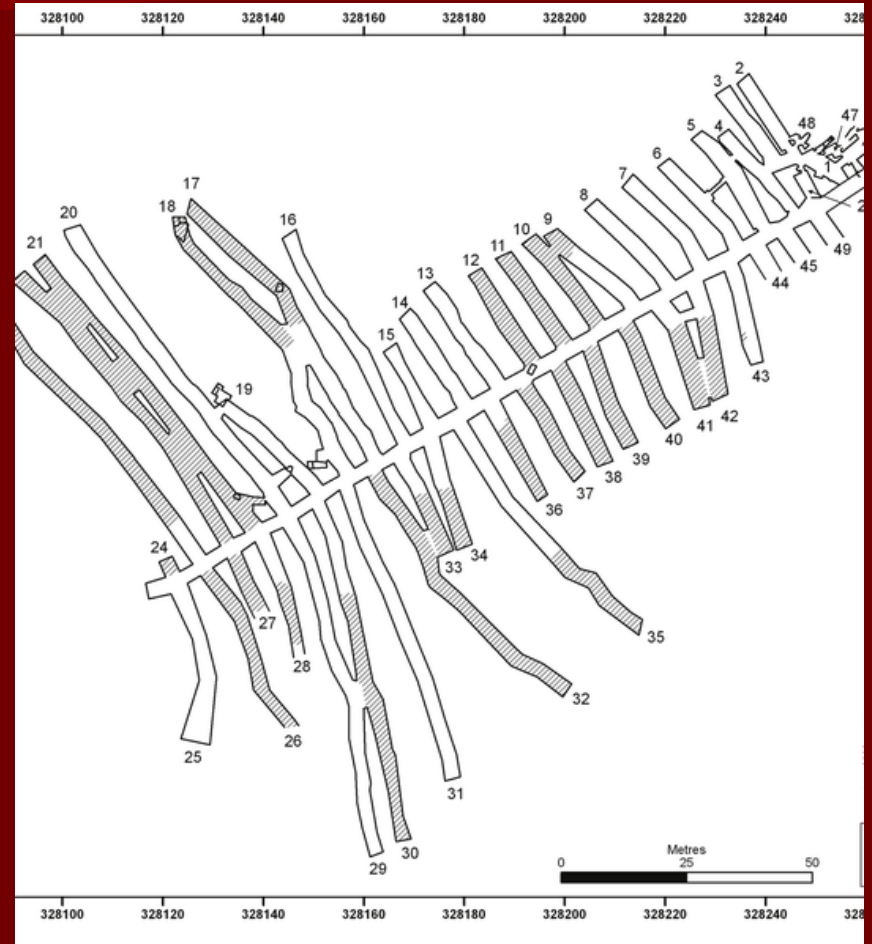
(Pyramid Text, Coffin Text and Book of the Dead)

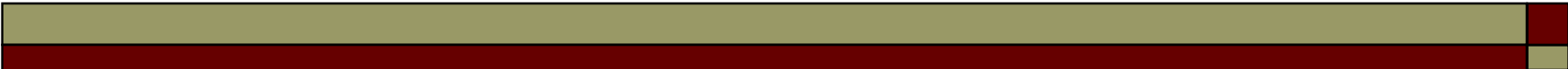


Who got
mummified



Nicholson, P., Ikram, S., & Mills, S. (2015). The Catacombs of Anubis at North Saqqara. *Antiquity*, 89(345), 645-661.
doi:10.15184/aqy.2014.53





What about the people, ancient lives?

- ❑ Few people got this treatment
- ❑ Few of anyone else survived – eaten by crocodiles, wild animals, harvested for material gain by the living....
- ❑ Cemeteries rarely mirror living populations/demographic
 - Rich burials dominated by males
 - Less elaborate burials can show more equal interment
 - Infant and child are rare – very rare (put in context of high mortality rates)
 - Foetuses, neonates, unbelievably rare
 - ❑ Doing things differently, different world view
 - ❑ Survivorship

Meet the 'Mud' Mummy 1207 B.C. New Kingdom Nicholson Collection, Australia



- MOSHENSKA, G. (2014). Unrolling Egyptian mummies in nineteenth-century Britain. *The British Journal for the History of Science*, 47(3), 451-477.



Conclusions

- ❑ Science always has and always will give us new ways of seeing
- ❑ It provides us with more risk-free interventions (high cost but risk free....)
- ❑ Power has lain with the 'scientist' – especially within forensics
- ❑ However, it comes with increased ethics -
- ❑ But times are a changing,
 - what rights do we have?
 - what rights do they have?

