

3 Sk-Helen-ton: The Osteology of Myself

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Over the past two years studying archaeology at university, I have found a love that may sound weird to many people and be considered slightly morbid. I have a fascination with skeletons. The human bioarchaeology module in the second year was an amazing opportunity to sit down with a box of bones and put together the jigsaw that is the human skeleton. Every week I would learn more about the human skeleton and the information osteologists could gain from analysing them. The story of an individual can be constructed from the age at death, sex, stature, health, trauma, pathology, metric traits etc. It got me thinking what I would find on my own skeleton if I were to osteologically analyse myself. . .

Like a good archaeologist, I was down the pub and I mentioned this idea to a lovely member of The Post hole editing team. Ever since then she's been (kindly) hounding me for an article – I'm sorry it took me so long to finally get round to writing. And before I start and get into the bones and the science I should say one thing, this is in no way attempts to be egotistical and shout 'look at me, look at me!' (although by definition, it is all about me). Instead it's merely an application of all I learnt about bones last year.

So let us start, imagine me as one of those Bonekickers only not 'mind numbingly dreadful'.

Assuming the skeleton is complete and preservation is very good, the first step is to search for sex indicators. There are a number of indicators around the skeleton, which would suggest the sex to be female. No single trait of the human skeleton enables a reliable sex determination, the most reliable estimates are those based on the whole skeleton.

The skull presents several sex differences, most of the dimorphic features of the skull are because of greater robusticity in men (Mays 1998, 36). Being female, my muscular ridges such as the temporal lines and nuchal crests will be smaller and the supraorbital ridge will be less prominent with a less pronounced mastoid process on the skull (Brothwell 1981, 61). The mandible of my skeleton will also be smaller and narrower.

The pelvis is the single most reliable area, as unlike the skull and bone measurements the dimorphism is related to the functional differences between the sexes (Mays 1998, 33; Bruzek and Murail 2006, 228). The pubic bone is one of the best diagnostic features when determining sex. The sciatic notch would be wide, indicating female, and other determining factors include the examination of the ventral arc, which would have a ridge on the ventral surface, again diagnostic of females. The ischiopubic ramus also would appear to be narrow, which again is a diagnostic feature of females. The subpubic angle over 90 degrees (Brothwell 1981, 62) could also be used to improve the accuracy of the sex determination.

It must be noted that an osteologist faces many limitations when trying to determine the sex of a skeleton. The general robusticity and size of post-cranial bones are subject to environmental aspects such as nutrition and activity patterns as well as genetics. This greatly limits the reliability of measurements when determining sex. As previously stated the pubic bone is one of the best diagnostic features when determining sex. Unfortunately, the fragile nature

of the bone means that in the common supine burial form it is the uppermost bone and most vulnerable to taphonomic damage and breakage (Mays 1998, 33). Damage and poor preservation is a further limitation concerning the estimation of sex in skeletal remains. Reliability and accuracy of sex assessment depends on the condition of the anatomical regions available and the use of the whole skeleton is ideal. However, this is not always possible in the archaeological record as preservation and completeness is a major limitation.

Once determining that my skeleton is female, as an osteologist I would begin to establish the age of the skeleton.

Using Brothwell's molar dental wear classification I could estimate the age of my skeleton to be towards the older end of the 17-25 age period. This was based on the judgement of attrition on the first, second and third molars which is based on the idea that there would be a continual increase of wear as one gets older. However, as a young adult who looks after my dental hygiene my teeth would present very little wear so could be estimated as in this age category.

Skeletal fusion is another technique used to estimate age. Examination of epiphyseal fusion would show that all bones had successfully fused excluding possibly the clavicle and the anterior part of the iliac crest (Mays 1998, 49). This is expected to occur before the age of 23 in women and 25 in males if consulting Mays (1998, 48) or between 18-30 years of age if consulting Brothwell (1981, 66). Therefore it would be fair to assume that my skeleton is yet to undergo this fusion.

Using Suchey and Brooks' method of age determination using the pubic symphysis based on the age related changes, I would estimate the age of my skeleton to be phase 1 for a female which means between the ages of 15-24 (Mays 1998, 53). The ridges and furrows pattern would still be very visible. The auricular surface would also show limited wear indicating a young individual.

No two skeletons are the same; metric and non-metric variations can be measured to show individual variation between each skeleton. I have to stop here as I have an overwhelming desire to keep flesh on my bones. This makes covering these variations rather difficult, so please forgive me if I move swiftly onto the pathology of my skeleton.

Growing up I had stages in my life when I was told I was 'slightly anaemic'. For me this simply meant I was fed more spinach and everything was fine. If this had not been the case and I had grown up suffering from more severe and continuous anaemia, my osteological report would describe pitting on the orbital roofs and on the cranial vault. This is called porotic hyperostosis and if present on the orbital roof it would be recorded in the report as *cribra orbitalia*.

Moving onto dental pathology, which I hope would show me to be an individual who took care of my dental hygiene, I have never had any fillings. My osteological report however would show up some interesting evidence of 21st century dentistry. Like many kids growing up, I was plagued with train tracks. Totally worth the pain and agony but on the happy day I got them removed Mr Dentist replaced the braces with a small wire glued behind top incisor teeth. From this, the osteologist will gain valuable information about dentistry.

Through the complete assessment of a skeleton you can also determine if an individual has ever experienced any skeletal trauma. From examining my left tibia, it may be possible to note a well-healed transverse fracture. This will be demonstrated by a bulbous collar of bone surrounding the fracture site and the lamellar bone would have been laid down in order to bridge the fracture. I can

tell you the story of me breaking my leg; it is very uneventful and paints me in a rather clumsy light. I was simply running down my garden when I was little and just fell over. My mum was quick to tell me to stand up and 'get on with it'. Standing up was not so successful and my efforts were accompanied by a cracking noise. Needless to say Mrs Mackie apologised by buying me a Twix, and I was happy again.

Fortunately for me I have not broken any other bone in my body or inflicted any other serious damage on myself. My pathology therefore would be fairly limited and hopefully present me as a healthy individual.

The article ends here really. From this short assessment of my skeleton I have applied several of the osteological techniques used in the analysis of skeletons. Hopefully it has been fairly informative, if not limited as the information you can gain from a skeleton is far more vast than I have covered. The most positive thing here is that in my short life I have not experienced any skeleton changing bouts of tuberculosis, no one has ever attempted to practice trepanation on me and I'm still young enough not to experience osteoarthritis. I hope you join me in celebrating my youthful skeletal health and excuse me for the indulgence of this article.

Bibliography

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