

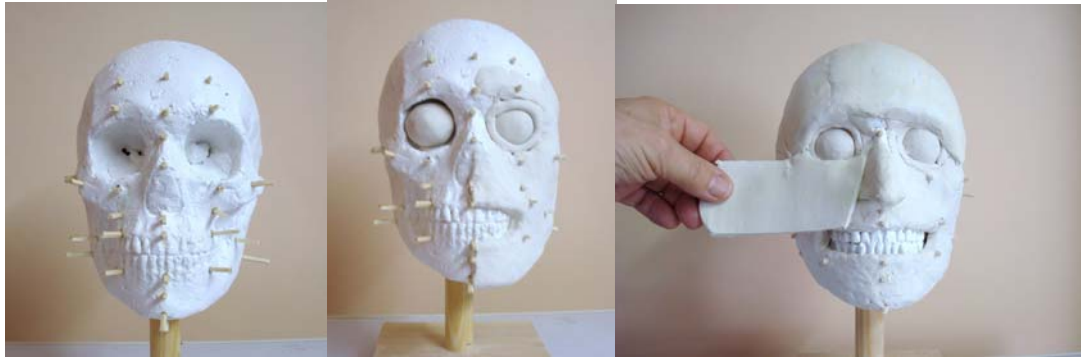
A short report on the Forensic Facial Reconstruction course held at Madingley Hall Cambridge Jan 16th – 18th 2009 for the University of Cambridge. Institute Of Continuing Education. Tutor: Dr Martin P Weaver.

The purpose of the course, apart from the educational aims was to evaluate the degree of artistic interpretation in the process of Forensic (or Archaeological) Facial Reconstruction. The 14 students on this course used the same skull, tissue depth and metrical data. The students came from a variety of backgrounds and none had attempted anything like this before and were untrained in facial anthropology and professed no artistic skill, therefore differences in the finished reconstructions would be at their most extreme.

1. The subject of this study was a 6th Century Saxon Male from an excavation at Easton Maudit in Northamptonshire. The age of this individual was assessed at around 37 years old. The skull shape was doliocephalic – that of a typical Northern European male. The skull was well balanced with average facial musculature and no pathological features and was therefore a good subject for this study. The 14 identical skull casts were produced in plaster and the modelling material used was white plastercine modelling clay. The skulls were fitted with tissue depth markers in the usual positions and measured as appropriate for the individual. The data set was adjusted to represent the tissue depths of a person ranging between normal and emaciated as this most likely represented the subject i.e. subsistence farming in difficult times. Modern ultrasonic depth data was used.

2. The basic method of reconstruction we used is a cross between the American and the British (Manchester) method that I piloted in 2007 with a ten week course for Leicester University Northampton Centre in the UK, in this method the underlying facial muscle and fat deposits are not individually modelled. As I have stated elsewhere, I feel it is not important and can be misleading to model individual facial muscles as in the Manchester (or British) method (*Neave et al*), as it is my view that with the face at rest - which is what we tend to model, the facial musculature blends with the fatty deposits and soft tissue. Modelling individual muscles and fatty deposits looks great in progression photographs but does not in my view give any advantage in accuracy of the finished result. The basic human face shape is based on the underlying skull and, as we age, by the progressive reduction of elasticity in the facial tissues (skin and muscle). Although the aging process is largely unquantifiable, clues gained from skeletal analysis and anthropomorphic study help us to approximate individual face types without reproducing a possibly inaccurate and misleading underlying facial architecture. In my method of reconstruction the muscle and fat deposits are applied as blocks leaving 4mm of tissue depth peg showing, the 'skin' is then applied this is rolled out modelling material at 4mm depth, this gives a smooth finish needing minimal refinement in the early stages of the build, this method is more suitable for beginners working under the time constraints of a short course.

3. The students began by measuring and cutting the skin depth pegs I had already inserted into the skull casts, the peg positioning was the standard 10 frontal and 11 bi-lateral layout. Once this was completed the fleshing out process began, the underlying soft tissue was added to allow 4mm of the pegs to show. Eye balls were inserted next and the production and application of 4mm of skin and the nose followed.



4. The lips and eye lids were then produced fitted and refined. The eyes in particular proved to be the most difficult part of the build and one of the most susceptible to differing artistic interpretation, any differences in this area can dramatically alter the face and is one area that needs further improvement to provide a reliable build method.

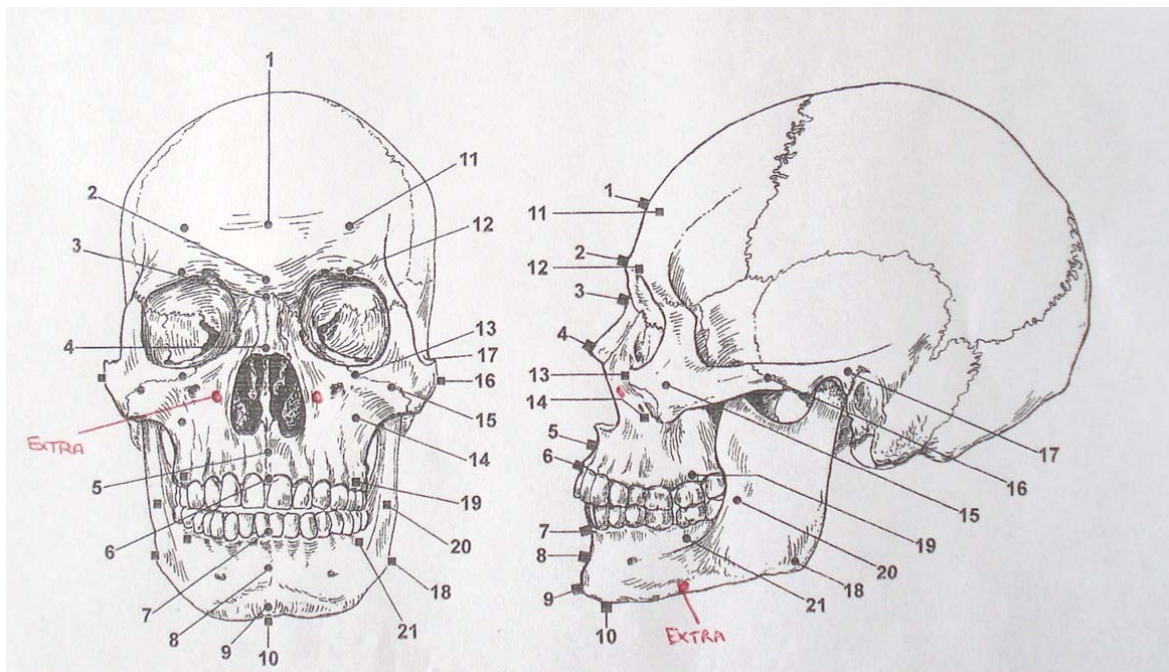


5. Once all the elements of the face were in place, refinement and aging could begin. The students received a handout sheet detailing male age line positions to aid the interpretation of the aging process – another unquantifiable area subject to artistic subjectivity. We then concentrated on the production of ears. The students tried two different methods to sculpt the ears – one from a block of clay, the other from component parts, both methods were equally successful. The ears were then fitted in the correct alignment (taken from the jaw) and positioned over the auditory meatus.



The production of hair was optional and students that felt they had done as much refinement that they could, added hair in differing styles (!)

6. For the next course I intend to add a further skin depth peg bi-laterally between the sub-orbital and inferior malar positions close to the nasal cavity, mid-line. An extra bi-lateral peg will be fitted to the mandible inbetween the mental eminence and gonion pegs, below sub M2. These pegs will hopefully correct commonly observed jaw line and zygomatic deviations and will be measured with comparative ultrasonic data.



Extra tissue depth peg positions

7. We have to remember that the students on these courses have had no previous experience of facial reconstruction and although the basic face shape was the same in all cases, the minor differences in the finished works show just how the results of facial reconstruction can vary. We cannot hope to completely remove artistic subjectivity from the process (especially in the eyes nose and mouth areas) but I think it can be reduced by improving the build procedure, laying down specific age, gender and ethnicity guidelines and of course further training in facial anthropology and clay modelling for interested students.

8. In summary then, having fourteen people reconstructing the same individual certainly highlights common areas in the process that needs some standardised methodology. I plan to offer further courses at Madingley and I will attempt to improve the procedure with each course with the aim of minimising artistic subjectivity in the final process.

9. I intend to use this same skull for the next course but will use normal range tissue depth data to observe the degree in which this alters the recognition potential of this individual.

Finally I would like to thank the participants of the course, their enthusiasm for the subject made it enjoyable and informative.

Martin Weaver 2009