Institution: University of Manchester

Unit of Assessment: 31 (Classics)

Title of case study: Reconstructing ancient faces

1. Summary of the impact

The lasting impact of Professor Prag's work on facial reconstruction is that it has become a vital tool for archaeologists, helping them to understand the past better. Facial reconstruction now plays a major role in many museum exhibitions around the world and the techniques developed in Manchester have increased public interest in past civilizations. An important aspect in the reconstruction process is the ability to work across disciplines to produce a complete picture. Manchester has pioneered this method of collaborative working with some ground-breaking results. The facial recognition methods established by Professor Prag continue to impact on archaeological and museum practices around the world to bring history truly to life.

2. Underpinning research

John Prag is jointly Professor Emeritus of Classics at the University of Manchester and Professor Emeritus of Archaeological Studies at the Manchester Museum. The impact is based on research that is on-going at the University of Manchester. A book *Making Faces* was published in 1997 (with a revised edition in 1999), building on earlier research and publications. Key researchers at Manchester University (dates are those of employment or honorary/emeritus positions at Manchester):

- Professor A.J.N.W. Prag (1969-date)
- Richard Neave (1959-2000)
- Professor Terry Brown (1981-date)
- Dr R.W. Stoddart (1978-2005)

Key external collaborators include:

- Dr J.H. Musgrave, Bristol University
- Dr Argyro Nafplioti, British School at Athens
- Dr O.T.P.K. Dickinson, University of Durham
- Dr Lena Papazoglou-Manioudaki, National Archaeological Museum in Athens

The collaborative techniques and academic rigour developed in Manchester achieved new levels of accuracy and a greater understanding of the technique of facial reconstruction. The art of reconstructing faces by methodically putting 'flesh' back onto the bones has become a vital tool for both forensic investigators and archaeologists. The work at Manchester has developed cross-disciplinary aspects which have not only allowed a focus on specific archaeological problems, but also facilitated the dissemination of complex research results to fellow academics as well as to the wider public. Throughout the research period since 1993 the reconstruction techniques have improved exponentially in terms of the anatomical data available and the materials used. Key findings of the research include:

1. The identification of the occupant of tomb II at Vergina in Greece as Philip II of Macedon, the father of Alexander the Great. This also identified Vergina as Aigai, the early Macedonian capital. (Most recent publications 2010/11 – see below 3.6 – building on discussions and research 1978-94.)
2. The illumination of burial practices and approaches to portraiture in Etruria (main publication 2002, repr. 2006, online version under discussion [see 3.4 below], based on research 1989-97) and Roman Egypt (published 2002 and 2006).
3. The study of kinship in Bronze Age Mycenae in Greece by looking at 'family' tomb groups and whether their reconstructed faces could provide clues to familial and thus dynastic links. The research led to a collaboration with Professor Terry Brown's team in Biomolecular Archaeology at The University of Manchester and to pioneering research into the survival and research application of ancient DNA. All this has now inspired a fundamental re-assessment of the people of this key site at a crucial period in early Greek history (publications 1995-2012: 3.1-3 and section 4 below; based on research 1986-2008).

The research is still extremely productive and continues to feed into the impact. Current or recent examples:

1. A research project based in the Manchester Museum to re-study 'Worsley Man' (2012-date) (see 4.1 below).
2. Advisor for reconstructions for the Hunterian Museum (Royal College of Surgeons, London) including the 'Irish Giant' (Charles Byrne, 1761–1783), and of the Paralympian Richard

Whitehead for the 2012 exhibition 'Anatomy of an Athlete' (see further below).
3. Our team made prototype reconstructions of a gunner and the bosun from the wreck of the Mary Rose (sank 1545) for the Mary Rose Trust (2008-2011); see further below.

3. References to the research (AOR – Available on request)

The quality of the research is evidenced by the fact that it has been published in leading peer-reviewed journals and series including the *BSA Annual* which is the one of the most important and widely-read journals in the field. Its quality can also be recognised by the peer-reviewed grants which it has attracted from organisations such as the Institute for Aegean Prehistory, the British Academy and the Society of Antiquaries. Not included in this academic list is the book *Making Faces* (1997/99) mentioned below (section 4). The following key publications take advantage of the exponential improvements in reconstruction techniques since 1993 mentioned earlier.

Key Publications

3.1. A.J.N.W. Prag, J.H. Musgrave, R.A.H. Neave, and Danae I. Thimme, 'Seven Faces from Grave Circle B at Mycenae', *Annual of the British School at Athens* 90 (1995) 107-36. (AOR)
3.2. Brown, Terry A., Brown Keri A., Flaherty, Christine E., Little, Lisa M. and Prag, A.J.N.W. (2000): 'DNA Analysis of bones from Grave Circle B at Mycenae: a first report'. *Annual of the British School at Athens* 95 (2000) 115-9; also Bouwman, A.S., Brown, K.A., Prag, A.J.N.W., Brown, T.A. 2008. 'Kinship between burials from Grave Circle B at Mycenae revealed by ancient DNA typing'. *Journal of Archaeological Science* 35: 2580-84 (DOI:10.1016/j.jas.2008.04.010).
3.3. A.J.N.W. Prag *et al*., 2009-11 and 2012. 'Mycenae Revisited, parts 1-4'. A series of articles in *Annual of the British School at Athens* 104-5 and 107 describing the recent work on the remains from Grave Circle A at Mycenae, with contributions by O.T.P.K Dickinson, J.H. Musgrave, Argyro Nafplioti, R.A.H. Neave, Lena Papazoglou-Manioudaki , A.J.N.W. Prag, Denise Smith (DOI:10.1017/S0068245412000056).

Other Relevant Publications

3.4. Swaddling, Judith and Prag, A.J.N.W. (eds), 2002. *Seianti Hanunia Tlesnasa: the Life and Death of an Etruscan Woman* (London, British Museum Press, Occasional Paper 100: London, repr. with further illustrations 2006). On-line version under discussion. (AOR)
3.5. John Prag and Richard Neave, 2010. 'Sibling semblance: Mausolus and his sisters' in Fiona MacFarlane and Catherine Morgan, *Exploring Ancient Sculpture. Essays in honour of Geoffrey Waywell* (Bulletin of the Institute of Classical Studies, London, Supplement 104), 109-20. (AOR)
3.6. Musgrave J., Prag A.J.N.W., Neave R., Fox R.L., White H. 2010. 'The Occupants of Tomb II at Vergina. Why Arrhidaios and Eurydice must be excluded'. *International Journal of Medical Sciences*; 7(6):s1-s15 (DOI:10.7150/ijms.7.s1). A more 'accessible' version is J.H. Musgrave and A.J.N.W. Prag, 2011. 'The Occupants of Tomb II at Vergina. Why Arrhidaios and Eurydice must be excluded.' in Y. Galanakis (ed.), *Heracles to Alexander the Great: Treasures from the Royal Capital of Macedon*, Ashmolean Museum, Oxford (exhibition catalogue), 127-30.

4. Details of the impact

Context

Putting flesh back on the bones is the clearest way of interpreting and presenting the results of detailed research not only for academic colleagues but also for non-specialists and the general public. Research undertaken at The University of Manchester has influenced museum practice across the country and achieved broad educational impact through lectures and extensive exposure in the media. Reconstructions from Manchester have received regular coverage in local, national and international newspapers [5.9, 5.10]. They have also featured in TV programmes such as Channel 4's 'Time Team' and BBC 4's 'Meet the Ancestors', as well in National Geographic Television collaborations with the Greek National Archaeological Museum, both broadcast (2011) and planned (2013) [5.3].

Impact on museum practice

When the Manchester team started there were virtually no such reconstructions, and they were regarded as more fitting to waxwork shows like Madame Tussaud's. Now, in the words of the Director of the Manchester Museum, 'facial reconstruction … plays a major role in many exhibitions around the world, and [Prag's] work is globally significant in that it has shown that facial reconstruction is not speculative but … has a high degree of accuracy … Prag's work … is considered the standard for facial reconstruction work in museum exhibitions, and many international colleagues indicate they are aware of it when they visit us' [5.1]. Some of the best

examples of reconstructions by the Manchester team include:

1. The popular gallery on 'Making Faces' in the Manchester Museum ran from 2002 to 2012. The museum does not record visitor numbers for individual galleries, but the total figures for the whole museum recorded 121,857 visitors in 2002-3, rising to 375,332 in 2012-13 [5.8]. Of the newly refurbished gallery, the Museum Director writes 'As "Ancient Worlds" comprises the main thoroughfare through the Museum, and the facial reconstructions form a major part of the gallery, we can be confident that a high proportion of visitors have engaged with the displays' [5.1]. Central here is the reconstruction of 'Worsley Man', the decapitated head of a man killed in the 1st century AD, probably as part of a ritual, and discovered during peat-cutting on Chat Moss in 1958. He is currently the focus of a collaboration between Professor Prag and other academics from the University of Manchester and elsewhere, concentrating on the details of his health, the manner of his death and the preservation of his head: it will culminate in a new reconstruction involving high resolution 3-dimensional scanning that explains this graphically to the visitor. It will also lead to a series of academic publications, enhancement of the Museum display, and public dissemination through a television broadcast (Bearkatt Productions for Channel 5, 2013-2014). The impact, then, is on-going, with transferral of facial reconstruction skills and knowledge beyond the University of Manchester.
2. At the British Museum, as the Head of the Italian collections in the Department and curator of the Etruscan and other antiquities from pre- Roman Italy can confirm, the reconstruction of the face of the Etruscan noblewoman Seianti Hanunia Tlesnasa remains a star attraction in the BM's Greek and Roman galleries, because 'visitors find a "person" to whom they can relate across 2,000 years … a very effective incentive to visitors to find out more about the period and culture'. It was completed in 2002 in a research project that threw much new light on Etruscan life and death and continues to have an impact today [5.2]. The Keeper, Department of Greece and Rome at the British Museum estimates that 'around 584,640 people see and engage with the reconstructed head of Seianti per year' [5.2].
3. At the Museum of Underwater Archaeology in Bodrum (Turkey) the reconstruction of the 'Carian Princess' displayed in her 'tomb' is one of the highlights of the museum tour [5.5]. Other Manchester reconstructions in Turkey can be found in the Istanbul Archaeological Museum and the Museum of Anatolian Civilisations (Ankara), as well as the Pennsylvania University Museum, at Mycenae museum and the National Archaeological Museum in Greece and Archaeological Museum of Archanes (Crete), the Drents Museum (Netherlands) and in museums across in the UK including the Ashmolean (Oxford), Colchester, Leeds, Rochester and St Albans. Techniques newly developed by the Manchester team form the basis of exhibits in the new Mary Rose Museum in Portsmouth which opened in May 2013.
4. An image of the reconstruction of the head of Lindow Man, the Iron Age body found in Cheshire in 1984 and reconstructed in 1986 for the British Museum, formed part of the museum's display until 2010 when the exhibition focus changed; however, plans for the next refurbishment of the Iron Age gallery include at least an image of the reconstruction.

In the summation of the Keeper of the Department of Greece and Rome at the British Museum, 'the importance of Professor Prag's interdisciplinary work can scarcely be overstated. … From a museum perspective, it is invaluable to be able to show reconstructions of ancient faces that are not simply artists' impressions, but are based on provable techniques … The demonstrable accuracy of the process … is indeed impressive to visitors' [5.2]. The Director of the Hunterian Museum at the Royal College of Surgeons, adds, 'The pioneering studies that [Prag] and Richard Neave have carried out have had a significant impact on museum practice in the UK world-wide over two decades. Beyond their considerable forensic value they have engaged tens of thousands of visitors with osteological human remains in a powerful and innovative way' [5.6]. Likewise, the Honorary Keeper at the National Archaeological Museum in Athens testifies, '[Prag's work] had a great impact to my work both as a field archaeologist … and as a Museum curator. It has provided me with important new tools to deal with age old problems, from the identity of the Myceneans to making them more attractive to the general public' [5.3]

Impact on public knowledge

It is not simply the 'accessibility' to research results which these reconstructions provide. It is very clear from reactions everywhere that seeing the faces of ancestors or those who once inhabited the local area has become a very important key to understanding the past (see also the examples cited in the previous section). The work of the Manchester team has long been a recurring lecture

subject requested by bodies such as The National Association of Decorative & Fine Arts Societies and U3A, as well as amateur archaeological and medical societies [5.7]. Visits to Manchester reconstructions in Greek and Turkish museums have been a selling point in the archaeological tours organised by Andante Travels, as its Deputy Director can confirm [5.5]. In fact Andante introduced 'Study Days' into their programme in 2012, with two held in Manchester on facial reconstruction in November 2012 and February 2013, both successful (numbers are deliberately kept small so that those attending can see clearly what is happening: 12 attended in November, 13 in February). In the words of the Deputy Director, 'Professor Prag has educated and entertained many of our guests on a Study Day entitled Reconstructing Faces … and we have had very enthusiastic feedback about these. It provides a very tangible contact with people from the past, and brings their stories to life. The scientific approach is also well explained and enjoyed' [5.5]. Three more have been requested for 2013-14. The popularity of Manchester's facial recognition with these organisations demonstrates the public interest in this type of work and the impact it is having on increasing interest in past civilisations. Furthermore, heads reconstructed for the National Archaeological Museum in Athens by the Manchester team 'were among the items most in demand' for a National Geographic Television programme, and they will also feature in a related exhibition in the US in 2013 [5.3].

Impact on archaeological knowledge

With new investigative techniques, facial reconstruction has now become commonplace, and the techniques developed by Professor Prag and Richard Neave, known as the 'Manchester method', have been copied by other practitioners around the world, perhaps most notably by an academic, formerly Richard Neave's assistant and then successor at Manchester, now at Dundee University - see e.g. 'History Cold Case' series on BBC2 (2010-11) and most recently her very high-profile reconstruction of Richard III (2013).

A prime instance was when the rediscovery in the National Archaeological Museum in Athens of two complete skeletons from the 1876-77 excavations at Mycenae led to a request from the Greek authorities to Professor Prag and his team for a new research project to study and reconstruct them in 2006-2007. The work for the facial reconstructions and the related DNA and strontium/oxygen isotope analysis has initiated a re-assessment of our understanding of the Greece in the Middle-Late Bronze Age, demonstrating very clearly how the impact of what is a three-dimensional research report stimulates a new approach to an 'old' subject. [5.3, 5.4].

Requests for images of reconstructions from magazines and publishers of popular works on history and archaeology still come in regularly from all over the world [5.9, 5.10]. *Making Faces* by John Prag and Richard Neave (London: British Museum Press, 1997/1999) continues to be a popular publication even though out of print. It is a widely-read basic textbook for students and the interested layman and an updated version is under discussion.

5. Sources to corroborate the impact

All claims referenced in section 4

5.1. Letter from the Director of the Manchester Museum.

5.2. Letter from the Keeper, Department of Greece and Rome, The British Museum, incorporating the testimonial of the Head of Italian Collections, The British Museum

5.3. Letter from the Honorary Keeper of the Prehistoric and Egyptian Collection, National Archaeological Museum, Athens

5.4. Letter from the Deputy Director, National Archaeological Museum, Athens

5.5. Confidential document from Andante Travels.

5.6. Letter from the Director of Museums and Archives, The Royal College of Surgeons of England

5.7. Lectures on facial reconstruction to members of NADFAS

5.8. Manchester Museum Visitor Numbers, 1995-2013

5.9. National Press: e.g. www.guardian.co.uk/science/2008/jun/01/genetics.sciencenews (1 June '08) (Mycenaean DNA); http://www.bbc.co.uk/news/uk-17350152 (Paralympian at the Hunterian).

5.10. Popular archaeology magazines: e.g. *Current World Archaeology* vol. 5 no. 2 (Dec 2011/Jan 2012) pp. 20-27; publishers of popular works: e.g. Maggy Saldais, *Big Ideas History One* (OUP Australia, 2011), pp.66 and 72; *Beaux Arts* Sept 2011 (issue on Alexander the Great) p. 16; *Australian Archaeological Diggings* vol. 17 no. 6 (Dec/Jan 2011) pp. 50-4.