A Lady of York: migration, ethnicity and identity in Roman Britain

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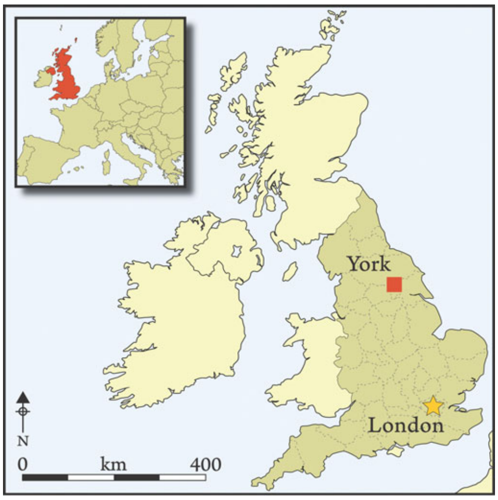

Modern methods of analysis applied to cemeteries have often been used in our pages to suggest generalities about mobility and diet. But these same techniques applied to a single individual, together with the grave goods and burial rite, can open a special kind of personal window on the past. Here, the authors of a multidisciplinary project use a combination of scientific techniques to illuminate Roman York, and later Roman history in general, with their image of a glamorous mixed-race woman, in touch with Africa, Christianity, Rome and Yorkshire.

Keywords: York, Roman, burial, isotope analysis, ancestry, rank, ivory, mortuary theory

Introduction

The Roman conquest incorporated Britain into an empire that comprised Europe, North Africa and the Near and Middle East, resulting in the extensive voluntary and forced movement of people (Birley 1979; Mattingly 2006). *Eboracum* (York), founded in *c*. AD 71 and located in north-eastern England, was both a legionary fortress and civilian settlement, and functioned as one of the provincial capitals for much of the later Roman period (Ottaway 2004). The civilian settlement included the wives and families of the military personnel, and upon discharge, many soldiers simply continued to live where they had served (cf. Mann 1983). Both the impact of the military, and extended visits by the Tripolitania-born Emperor Septimius Severus (AD 208-211), and later Constantius I and Constantine the Great (AD 306), provide potential circumstances for immigration to York, and for the foundation of a multicultural and diverse community (cf. Hartley *et al.* 2006).

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Epigraphy is a particularly useful source of evidence for the diversity of the Roman world, as demonstrated by Birley (1979) and Noy (2000). Inscriptions from York attest to the presence of Gauls, Italians and a possible Egyptian at York, although much of the epigraphic evidence is significantly earlier than the burial discussed here (Ottaway 2004). Artefactual evidence also suggests that *'the Roman north was a cosmopolitan place with a great mixing of people from all over the empire'* (Cool 2002: 42). For example, Swan (1992) argued for the presence of North Africans in York on the basis of braziers and other vessels typical of North African food-ways but made in local fabrics.

Previous studies of the physical remains of the people of *Eboracum* (Buxton 1935; Warwick 1968) suggested that the males exhibited heterogeneous craniomorphometric traits suggesting migration from a variety of geographic locales. However, both argued that the female population of Roman York was indigenous. In their view, the diversity noted in the female crania represented genetic admixture between local women and migrant males (Warwick 1968: 155). While the methods and ideological context of some early craniometric studies were suspect (Gould 1992), these are questions worthy of study, especially given advances in archaeological and forensic science in recent years. Such techniques can be combined fruitfully with recent theoretical approaches to the diversity of the Roman Empire (e.g. Mattingly 2006), in particular the lived reality of mixed communities. Diaspora theory (Lilley 2004; Cohen 2008) may provide a useful theoretical tool, as it examines how identities are created and maintained in communities dispersed amongst other peoples.

Forensic ancestry assessment and isotope analysis are relatively new techniques in archaeology but, despite the inevitable methodological issues, both have the potential to address questions of diversity, mobility and identity that are central to our understanding of the Roman Empire. A new research project at the University of Reading, UK, has begun to address these questions by examining skeletons from Roman urban centres such as Gloucester, York and Winchester, with initial results suggesting that up to 20 per cent of the sample can be defined as 'non-local' in the sense of coming from elsewhere in *Britannia*, with some individuals originating from elsewhere in the Empire (Chenery *et al.* 2009; Eckardt *et al.* 2009; Leach *et al.* 2009).

In some case studies, the integration of different kinds of evidence applied to a single individual allows us to enlarge interpretation, confront complexity and create biographical narratives (e.g. Wilkie 2003). To illustrate the potential of this approach, we have chosen to focus on one individual from Roman York – a female found with ivory bangles in a stone coffin at Sycamore Terrace, known as ST60.

'The ivory bangle lady'

In August 1901, a stone coffin was discovered near Sycamore Terrace, Bootham (Boynton 1902: 6), north of the River Ouse and south-west of the legionary fortress (Figure 1; RCHM Ebvracvm 1962; Ottaway 2004). The coffin was aligned almost north-south, with the head to the north (Boynton 1902: 104), and the skeleton was supine, undisturbed and in a good state of preservation. Unfortunately, the exact location of the funerary artefacts was never published. The rich array of unusual grave goods found in the coffin has recently been reviewed by Cool (2006; see Figure 2). All of the objects are dated to the second half of the

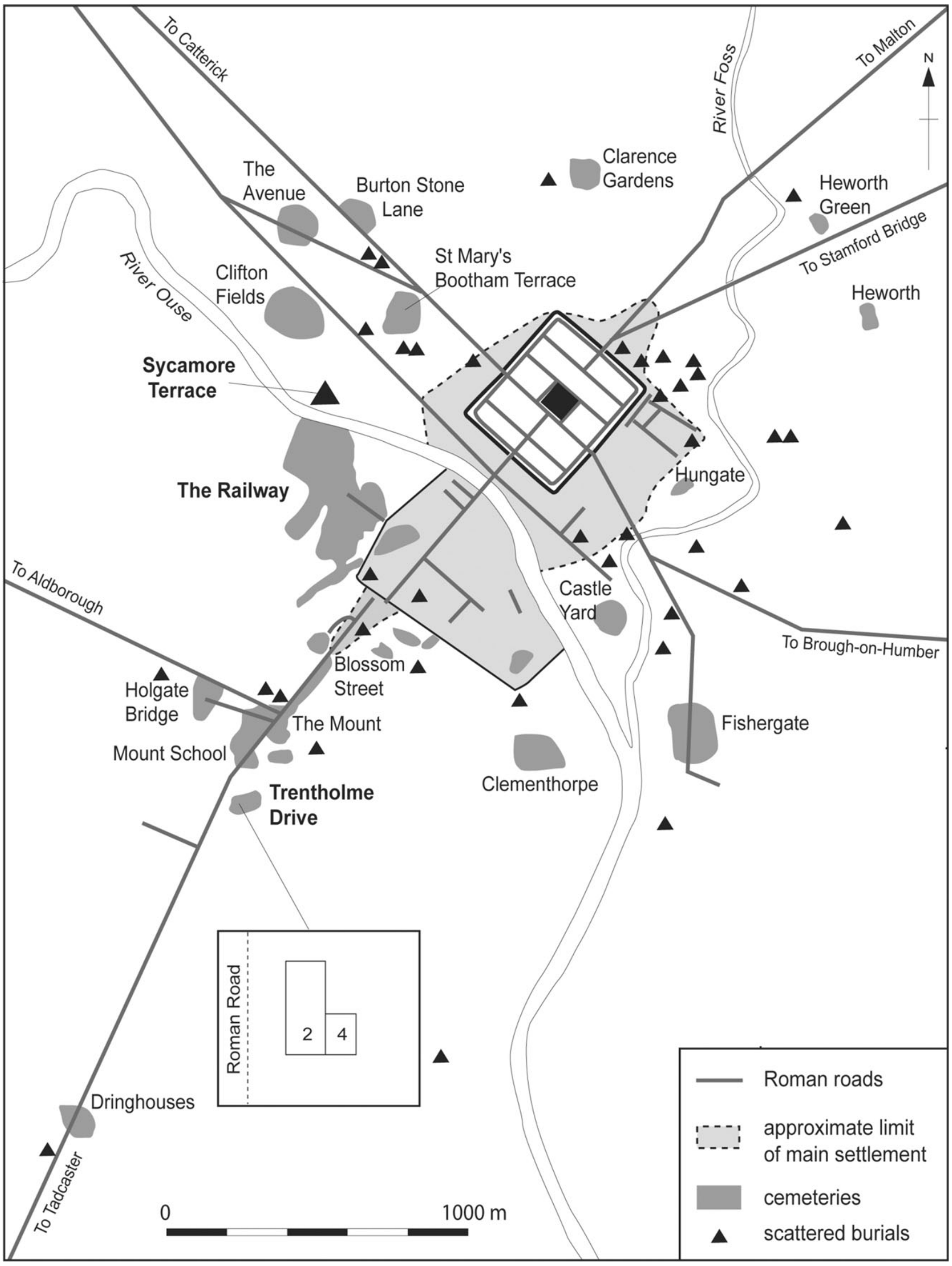

Figure 1. Location map (after Ottaway 2004: Figure 1, re-drawn by Edeltraud Aspoeck).

Figure 2. The grave goods of the 'ivory bangle lady' included: (clockwise from top left) a bone openwork mount, beads, earrings and pendant, blue glass jug, blue glass bead bracelet, glass mirror, jet and ivory bracelets. The jug is 123mm tall. ©York Museums Trust (Yorkshire Museum).

fourth century and relate to personal appearance and display. They include jet and elephant ivory bracelets, earrings, pendants and beads. Also found were a blue glass jug, likely to have contained cosmetics or perfumes, and a glass mirror.

The wealth of the 'ivory bangle lady' is evident not only in the stone coffin and the quality and quantity of objects, but also in their diverse, sometimes exotic provenances (Allason-Jones 1996: 20; Cool 2006: 156). This includes the use of ivory, a rare material in Roman Britain (McGregor 1985: 38-9), although it occurred in the nearby cemetery discovered during the construction of the railway station in the 1870s (Richmond 1946: 79, Figures 12-14; RCHM Ebvracvm 1962: 82). While the elephant symbolised Africa in Roman thinking and art (Toynbee 1973: 50-54), it is currently not possible to distinguish between African and Asian elephant ivory, and no such distinction was made in antiquity (cf. Cutler 1993: 174-5). By contrast, jet is a relatively local commodity, perhaps sourced from Whitby in North Yorkshire although other sources are now known (Allason-Jones 2002). Jet became popular in the third and fourth centuries, and may have had religious significance, being associated with the cult of Bacchus and with Christianity (Allason-Jones 1996: 17).

The most famous object from this burial is a rectangular fragmentary openwork mount of bone, possibly from an unrecorded wooden casket. It reads: S[OR]OR AVE VIVAS IN DEO, or 'Hail, sister, may you live in God' (RIB II.3: no. 2441.11). The inscription suggests Christian sentiments, but the obvious concern with personal appearance and the rich grave goods are at odds with current assumptions about early Christian burials (Toynbee 1968: 191; Mawer 1995: 87; Cool 2006: 156-7).

Ancestry

In 1901, little attention was given to the skeletal remains interred within the coffin (Boynton 1902; RCHM Ebvracvm 1962: 73). A re-assessment of ST60 showed that the skeleton is of a young female, aged between 18–23 years. Her height was calculated by means of regression formulae based on the correlation of limb-bone length to stature (Trotter 1970), suggesting a height of 5'1" (range: 5'0"–5'2" or 152-160cm) based on the maximum length of the femur (414mm). This makes her only slightly shorter than the average female from Roman Britain, where the average stature has been estimated at 5'2" (Roberts & Cox 2003: 142). The skeleton was gracile and did not exhibit pronounced muscle markings that would have suggested a strenuous lifestyle (Hawkey & Merbs 1995). There was no evidence of trauma, pathology or childhood stress, and no apparent cause of death.

While some early craniometric studies were tainted by racism (Gould 1992; Arnold 2006: 15-19, Pl. 1; Gosden 2006), ancestry assessment is today an established method in forensic anthropology and offers valuable additional information on the identity of an individual. Ancestry assessment methods that evaluate cranial and facial morphology (Bass 1995) traditionally use simplified categories such as 'mixed race', 'black' and 'white', but it is understood that skeletal assessment does not give information about skin colour, and that discretely defined racial groups do not exist (Brace 1995; AAPA 1996). Instead, morphological and metrical assessments of the skull tell us about phenotypical variation of humans over geographic areas (Brace 1995; AAPA 1996).

The remains of the 'ivory bangle lady' were analysed using standard methods for the assessment of ancestry in forensic anthropology (see Bass 1995; Byers 2005). During the osteological analysis it was noted that the facial characteristics of this female exhibited a mix of 'black' and 'white' ancestral traits (Figure 3). The skull exhibited a low, wide and broad nasal ridge and wide inter-orbital breadth suggestive of 'black' ancestry, while the nasal spine and nasal border demonstrated 'white' characteristics. The shape of the nasal aperture was inconclusive. Although some post-mortem damage had occurred, the cranium was complete enough to perform a craniometric analysis, which quantifies the characteristics on an objective scale in an attempt to further define the ancestral identity of an individual. Standard craniometric measurements were taken (Howells 1973, 1995; Bass 1995; Byers 2005; Jantz & Owsley 2005) and were compared to Howells' worldwide reference populations and the forensic data bank, using FORDISC 3.0 discriminant functions software (Jantz & Owsley 2005). When using these multivariate analyses, similarity to a reference population does not indicate a specific identity, but rather a physical affinity of the unknown cranium to the closest population within the reference collection. It should be noted that this reference collection comprises only early modern populations, and that the recording of craniometric

Figure 3. ST60 (60/1977), 'The ivory bangle lady'.

data of Roman-period skeletons from Britain and the Mediterranean is clearly a research priority (Leach *et al*. 2009).

The degree of similarity of the unknown cranium to the populations included in Howells' samples is provided by the *Mahalanobis Distance* (MD), a value best expressing the overall similarity of the test cranium to the reference populations (Table 1; Figure 4). The closer the MD score is to 0, the more similar the unknown cranium is to the reference group. In the current study, scores over 10 were not considered significant. FORDISC 3.0 also provides calculations of 'typicality' and 'posterior' statistical probabilities; however, as the latter assume that the test cranium must belong to one of the reference populations, only the former are appropriate for the current investigation. *Typicality probabilities* express the

Table 1. FORDISC 3.0 results for 'The ivory bangle lady' craniometrics.

Reference population (in order of closest affinity to the test cranium)	Mahalanobis distance	Typicality probabilities		
		Typ F	Typ Chi	Typ R
Black American females 19th century (**BF19**)	8.3	0.607	0.504	0.579 (32/76)
Black American females 20th century (**BF20**)	12.7	0.277	0.177	0.195 (66/82)
White American females 19th century (**WF19**)	14.5	0.198	0.106	0.171 (63/76)

likelihood of a cranium belonging to a particular group, based on its distance from that group, and the variability of all the populations tested (Jantz & Owsley 2005). They are represented as values from 0 to 1; the higher the number, the more similar are the values of the test cranium to the mean of the reference population. Typicality probabilities of less than 0.05 would indicate no affinity to the reference population (Jantz & Owsley 2005), whereas scores greater than 0.7 would suggest a strong association with the group.

The results of the craniometric multivariate analysis of ST60 suggest greatest affinity with two reference populations of African-American females, particularly BF19 which comprises individuals from the nineteenth-century Terry and Hamann-Todd collections (Table 1; Figure 4). The MD is under 10 at 8.3 and the typicality probability is just below 0.7 at 0.6 (Table 1). It should be stressed that similarity to African-American reference populations does not indicate a *specific* identity or regional origin, but rather a physical affinity to the closest population within the reference collection. The African-American populations in Howell's database are characterised by a much larger element of genetic admixture than the Sub-Saharan African groups and it is likely that ST60's affinity to the African-Americans is also the result of mixed ancestry. The suggestion of mixed ancestry for ST60 is also supported by the results of the anthroposcopic assessment of morphological traits, which gave both 'white' and 'black' traits. The fact that ST60 shows only little or no affinity to any of the 'white' populations in Howell's database further underlines her unusual ancestry within the north-west European context. Roman North Africa is well known for its mixed populations (e.g. Mattingly & Hitchner 1995: 171-4) reflecting Phoenician, Berber and generally Mediterranean influences, and individuals from Roman North Africa are therefore more likely to display mixed rather than strongly Sub-Saharan features.

The presence of a possibly North African individual in Roman York may be at odds with popular preconceptions of a typical northern Romano-British population, but North Africans are well documented in the epigraphic record of Roman Britain (Thompson 1972; Birley 1979). However, this historical and epigraphic evidence largely predates the burial; this woman's suggested origin would thus provide rare evidence for late Roman long-distance migration. In order to confirm whether this woman was a foreigner who may have migrated to York, oxygen and strontium isotope analysis was employed.

Strontium and oxygen isotope analysis

Strontium and oxygen isotopes are incorporated into the skeletal tissues of humans and animals through the food and drink they ingested and allow for the characterisation of

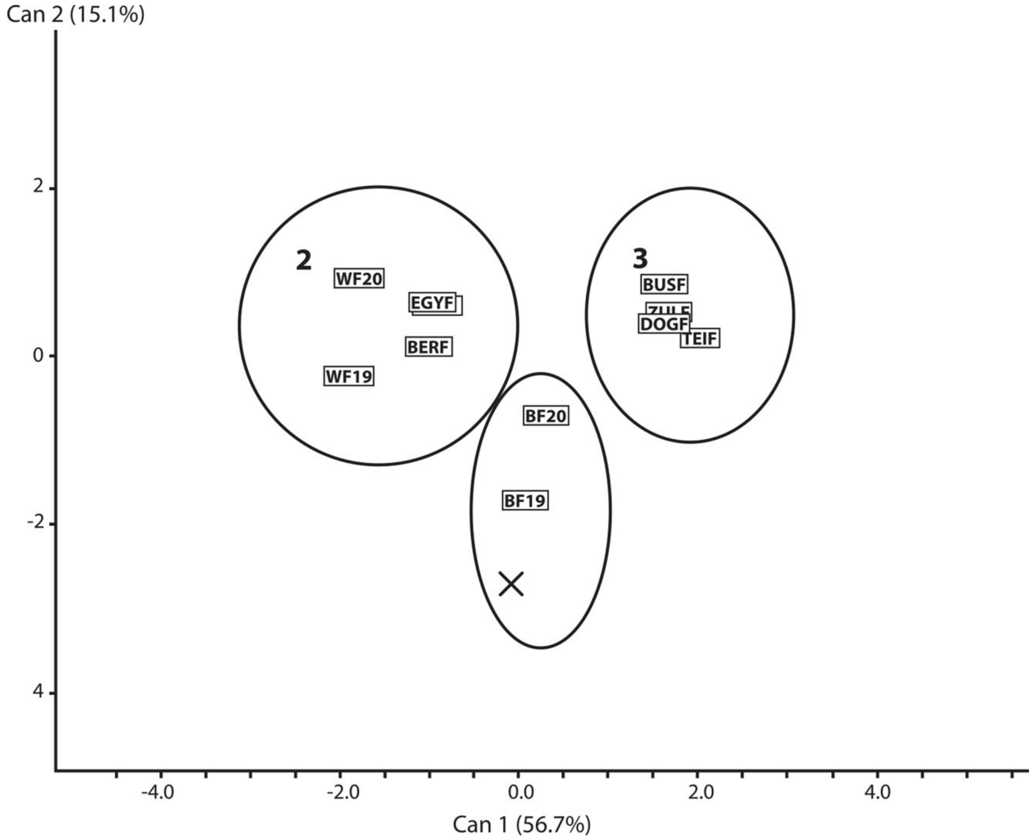

Figure 4. FORDISC 3.0 graph, indicating position of the 'ivory bangle lady' cranium (marked by a black cross) in relation to the European (2) and African (3) reference populations. The closest populations are in the central cluster (African-Americans), falling between the two main European and African population groups.

the places where individuals resided at the time of tissue formation in terms of geology (strontium) and climate (oxygen) (Longinelli 1984; White *et al.* 1998; Bentley 2006; Daux *et al.* 2008). For ST60, tooth enamel of a second premolar (age of formation ~3–6 years, see Smith 1991) was prepared for strontium and phosphate oxygen isotope analysis following the methods described in Evans *et al.* (2006).

The results (Table 2) can be put in the context of a large (n = 50) set of human oxygen and strontium isotope data from other Roman burials in York (Leach *et al.* 2009). Oxygen isotope ratios can also be compared with the isotope composition of modern UK groundwater which is relatively well known (Darling *et al.* 2003). Although palaeoclimate evidence indicates that the Roman period in Britain was somewhat warmer than today (Dark 2000: 19-28), recent work by Daux *et al.* (2005) suggests that oxygen isotope ratios of skeletal phosphate ($\delta^{18}O_p$) are either not sensitive to minor variations in surface temperature, or that temperature-induced changes are offset by other climatic factors. In addition, samples of ground- (rather than surface) water usually preserve long-term isotope signatures of precipitation which should be buffered against smaller climate fluctuations (Darling *et al.* 2003; Darling

Table 2. Oxygen (phosphate (p) and drinking water (dw)) and strontium isotope data of tooth enamel for ST60.

Sample	$d^{18}Op_{VSMOW}$ (‰)	$d^{18}Odw_{VSMOW}$ (‰)	Sr ppm	$^{87}Sr/^{86}Sr$
YST-60-P2	+18.7±0.1	−4.6±0.3	102	0.70943

2004). We therefore reason that these modern water data are valid comparisons for our archaeological samples, at least within the errors inherent in the analysis and conversion of phosphate oxygen to drinking water values (see Daux *et al.* 2008; Chenery *et al.* 2009). We chose to calculate estimated drinking water values ($\delta^{18}O_{dw}$) from the $\delta^{18}O_p$ data using the equation of Levinson *et al.* (1987), as we have found that this formula, applied with the necessary method bias correction of 1.4 (see Chenery 2005), provides the best fit for expected drinking water values for locals from archaeological sites across the UK (Chenery *et al.* 2009).

Topographically York sits centrally in the Vale of York, in east central England. The geology of the Vale of York is dominated by Permo-Triassic sandstones and Triassic mudstones, which extend north-south from Hartlepool to Nottingham. Along the east side of the vale, within 30km of York in the Yorkshire Wolds, is Cretaceous Chalk. The western margin of the vale is composed of Permian Magnesian Limestone and further to the west are Carboniferous Millstone Grit and Coal Measures. A recent study of Roman Catterick produced a mean bio-accessible strontium value of 0.70942±0.00126 (2s), n = 13 for plants growing within the Vale of York around Catterick (Chenery 2009). The significance of this study is that the geology (bedrock, glacial and alluvial deposits) in the Catterick area is an extension of that found around York. We expect similar $^{87}Sr/^{86}Sr$ for the same geologic terrain in both locations and therefore that strontium isotope values between 0.7082 and 0.7107 are consistent with an upbringing in York. The reader needs to be aware, however, that Permo-Triassic strata are also found extensively throughout England and that these values are therefore not overly specific for any one location. The Vale of York is likely to have been the major source for grain and other foodstuffs consumed in York although it has to be acknowledged that military and urban sites such as York would have received food supplies not just from their immediate hinterland, but potentially from considerable distances (Stallibrass & Thomas 2008).

The strontium isotope ratio for ST60 is squarely within the range defined for the York area (Figure 5). However, at 0.7094 it is also very close to the $^{87}Sr/^{86}Sr$ of modern seawater (0.7092) and would therefore also be consistent with a number of other places in the Roman world, including most Mesozoic terrains as well as coastal areas where marine strontium from seaspray or precipitation has significant input to the local biosphere and may depress the isotopic signal even of older, more radiogenic rocks (Capo *et al.* 1998; Montgomery *et al.* 2003, 2007).

At −4.5 ‰, ST60's $\delta^{18}O_{dw}$ ratio plots at the very high end of the British drinking water range. This result makes it extremely unlikely that she spent her childhood in the York area, where some of the most negative freshwater values in the UK are found (Darling *et al.* 2003; Figure 5). In fact, drinking water values ~>−6‰ have been reported only from the extreme

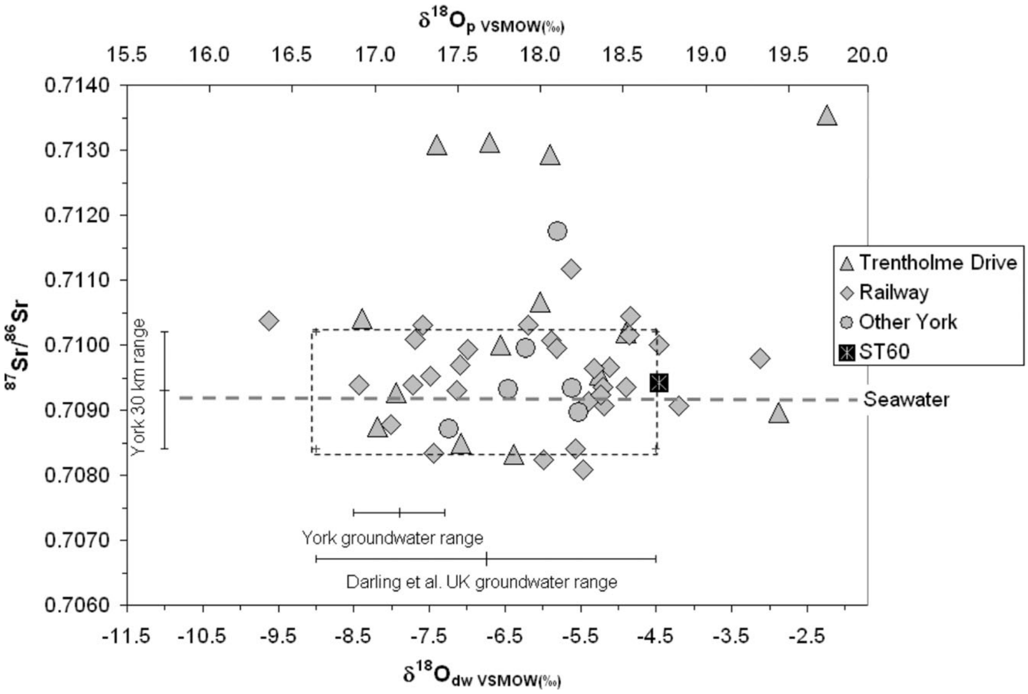

Figure 5. Strontium and oxygen ($\delta^{18}O_p$ and corresponding $\delta^{18}O_{dw}$) isotope data for ST60 in comparison to other Roman period humans from York (Leach et al. *2009). Also shown are the estimated range of biosphere $^{87}Sr/^{86}Sr$ for* c. *30km around York (Chenery 2009) as well as the range of modern drinking water in the UK and the York area (Darling* et al. *2003). The dotted square encloses individuals with $^{87}Sr/^{86}Sr$ consistent with an upbringing in York and $\delta^{18}O_{dw}$ ratios within the UK range.*

west of Britain, the Scottish Isles, western Wales and the Isle of Man as well as modern Devon and Cornwall (Darling *et al.* 2003) – all places outside, or on the very periphery of, Roman control over Britain. Alternatively, such drinking water values are also consistent with various other areas in Western Europe (extreme western France and the Iberian Peninsula) and along the Mediterranean coast, both on the European and North African side (Longinelli & Selmo 2003; Lykoudis & Argiriou 2007; IAEA/WISER 2008: IDW Long-Term annual average ^{18}O map of Europe). While we are lacking comparative human and strontium biosphere data from most of these areas, it is not possible to further constrain potential regions of origin. In summary, the oxygen and strontium isotope evidence suggests that ST60 spent her childhood either in the west of Britain or, perhaps more likely, in compatible, possibly coastal, areas of Western Europe and the Mediterranean.

Discussion and conclusions

All evidence (unusual burial rite, unusual ancestry, strontium and oxygen isotope data) taken together can make a convincing case for an incomer to Roman York who was of high status. The 'ivory bangle lady' was buried with rich grave goods made from both local and

Figure 6. Reconstruction image by Aaron Watson.

exotic materials. While the jet bracelets reflect her access to local trade networks, the ivory bangles may have acted as a reminder of her possible homeland, even if only in terms of the raw material rather than the place of production (McGregor 1985: 38-9). While there is still some debate about her religious beliefs, her oxygen isotope signature makes it unlikely that she grew up in York. Rather, it places her at the western edge of Britain or, perhaps more likely, an area of similar 'warm' climate on the Continent. Her strontium isotope value is not distinctive but would support an upbringing in proximity to the coast. The craniomorphometric analysis suggests that she may have been of 'mixed race' ancestry. In cosmopolitan *Eboracum*, which had been home to Severus and his troops nearly 200 years earlier, perhaps her appearance was not that unusual. A similar case of a high status woman buried in a lead sarcophagus and with jet artefacts, for whom isotope analyses indicated non-British origins, is known from fourth-century Roman London (Thomas 1999; Montgomery 2002).

This paper has stressed the ambiguous information emerging from the various scientific techniques, a result that may reflect the complexities of identities in the past as well as the early state of the methodologies. The difficulties of understanding 'race' can be further explored through a reconstruction image. The scene (Figure 6) shows the funeral of the woman, depicting the recorded grave goods being placed in the coffin by various mourners. In representing these individuals we have made a deliberate choice to represent diversity in terms of age, gender and ethnic origin. For the 'ivory bangle lady' herself, the artist, Aaron Watson, used shading across her face to highlight the difficulties of reconstructing skin colour and hair style, forcing us to look again, both at her and our preconceptions.

The story of the 'ivory bangle lady' should also be viewed in the context of wider research carried out on 45 individuals from Roman York (Leach *et al.* 2009), which has raised a number of methodological and theoretical points. Methodologically, the use of forensic anthropology, FORDISC 3.0 and isotopic analysis is relatively new in Roman archaeology (Montgomery 2002; Budd *et al.* 2004: 134; Evans *et al.* 2006), but clearly has considerable potential. It is important to note that suggested places of origin are based on known information, but other locations with similar climate and geology cannot be ruled out. For isotopic analysis, there is a need for more comparative material, in particular from mainland Europe, North Africa and the Near East, while osteological reference collections from more diverse archaeological contexts are to be desired for the future development of programmes such as FORDISC.

On a theoretical level, this work forces us to address how archaeologists identify and interpret incomers. While the presence of racism in antiquity can be debated (Isaac 2004, 2006), there is no doubt that racist views have tainted the ways in which human remains have been studied in the past (Gosden 2006). While we have used the term 'mixed race' as shorthand throughout this paper, it is much more helpful to think in terms of population variability within a historically specific context. The scientific analysis of the human remains can be contrasted fruitfully with burial rite and finds to reveal the complexities of diaspora communities. It is not always obvious from the grave goods who is an immigrant and who is a local adopting new practices, just as there is no simple relationship between origin, status, health and diet (Evans *et al.* 2006; Eckardt *et al.* 2009). Only a combination of methods can unravel these complex patterns, and begin to distinguish between first and second generation migrants. The case of the 'ivory bangle lady' contradicts assumptions that may derive from more recent historical experience, namely that immigrants are low status and male, and that African individuals are likely to have been slaves. Instead, it is clear that both women and children moved across the Empire, often associated with the military (James 2001: 80). This suggestion of female mobility is echoed in other recent studies at Portus, Rome's harbour city (Prowse *et al.* 2007) and in Raetia (Schweissing & Grupe 2003).

The suggestion that ancestry assessment is racist, or that scientific techniques result in biological determinism or reductivism, is misguided. The identification of descent and geographical origin says nothing about the historically specific social identities of these individuals. The archaeological evidence can reveal information about the 'ivory bangle lady's' status, gender and religious beliefs, but it can only truly do so when combined with the osteological and isotopic data. Such an integrated approach can reveal the complexities and interplay of biological and social identities, and provide a much richer picture of the Roman past.

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